WEST Search History

DATE: Thursday, June 26, 2003

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=ADJ			
L1	histidine phosphatase or histidine protein phosphatase	16	L1

END OF SEARCH HISTORY

WEST

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Search Results - Record(s) 1 through 16 of 16 returned.

☐ 1. Document ID: US 20030092155 A1

L1: Entry 1 of 16 File: PGPB May 15, 2003

PGPUB-DOCUMENT-NUMBER: 20030092155
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030092155 A1

TITLE: Modified phytases

PUBLICATION-DATE: May 15, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kostrewa, Dirk	Freiburg		DE	
Pasamontes, Luis	Trimbach		CH	
Tomschy, Andrea	Grenzach-Wyhlen		DE	
Loon, Adolphus van	Rheinfelden		CH	
Vogel, Kurt	Basle		CH	
Wyss, Markus	Liestal		CH	

US-CL-CURRENT: 435/195; 424/94.6, 435/188, 435/196

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Desc | Image

☐ 2. Document ID: US 20020119462 A1

L1: Entry 2 of 16 File: PGPB Aug 29, 2002

PGPUB-DOCUMENT-NUMBER: 20020119462
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020119462 A1

TITLE: Molecular toxicology modeling

PUBLICATION-DATE: August 29, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mendrick, Donna L.	Mount Airy	MD	US	
Porter, Mark W.	Germantown	MD	US	
Johnson, Kory R.	Bethesda	MD	US	
Castle, Arthur L.	Washington	DC	US	
Elashoff, Michael R.	Germantown	MD	US	

US-CL-CURRENT: 435/6; 702/20

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc | Image

3. Document ID: US 6391605 B1

L1: Entry 3 of 16 File: USPT May 21, 2002

US-PAT-NO: 6391605
DOCUMENT-IDENTIFIER: US 6391605 B1
**** See image for Certificate of Correction ****

TITLE: Modified phytases

DATE-ISSUED: May 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kostrewa; Dirk	Freiburg			DE
Pasamontes; Luis	Trimbach			CH
Tomschy; Andrea	Grenzach-Wyhlen			DE
van Loon; Adolphus	Rheinfelden			CH
Vogel; Kurt	Basel			CH
Wyss; Markus	Liestal			CH

US-CL-CURRENT: 435/196; 424/94.6

ABSTRACT:

A process for the production of a modified phytase with a desired property improved over the property of the corresponding unmodified phytase is disclosed, as well as modified phytases, polynucleotides encoding modified phytases, and animal feed including modified phytases.

24 Claims, 97 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 95

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

4. Document ID: US 6331407 B1

L1: Entry 4 of 16 File: USPT Dec 18, 2001

US-PAT-NO: 6331407
DOCUMENT-IDENTIFIER: US 6331407 B1

TITLE: Antibiotics and methods of using the same

DATE-ISSUED: December 18, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Novak; Rodger	Memphis	TN		
Tuomanen; Elaine I.	Germantown	TN		

US-CL-CURRENT: 435/7.34; 435/243, 435/252.1, 435/253.4, 435/7.2, 435/7.32, 514/12

ABSTRACT:

The present invention discloses novel antibiotic peptides, including naturally occurring peptides. The present invention also includes the nucleic acid sequences encoding such peptides and the corresponding amino acid sequences. Methods of identifying, making, and using the antibiotic peptides are also disclosed. The present invention further provides novel proteins involved in the regulation of bacterial autolysis.

8 Claims, 26 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 22

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Image

☐ 5. Document ID: US 6245502 B1

L1: Entry 5 of 16 File: USPT Jun 12, 2001

US-PAT-NO: 6245502
DOCUMENT-IDENTIFIER: US 6245502 B1
**See image for Certificate of Correction **

TITLE: Target system

DATE-ISSUED: June 12, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Emi; Bernhard	Zollikofen			CH

US-CL-CURRENT: 435/4; 435/194

ABSTRACT:

The bacterial phosphotransferase system (PTS) as a drug target system catalyses the uptake and phosphorylation of carbohydrates. It is further involved in signal transduction, e.g. catabolite repression, chemotaxis, and allosteric regulation of metabolic enzymes and transporters. It is ubiquitous in bacteria but does not occur in eukaryotes. This uniqueness and the pleiotropic function make the PTS a target for the development of new antimicrobials. Assays are described that lead to the discovery of compounds which uncouple the PTS, by acting as protein histidine/cysteine phosphatases. Uncoupling of the PTS leads to inhibition of carbohydrate transport, repression of catabolite controlled genes (e.g. certain virulence genes) and depletion of phosphoenolpyruvate. Compounds from combinatorial libraries with high affinity for phosphoenolpyruvate-protein-phosphatase (Enzyme 1) serve as lead structures for the development of inhibitors and uncouplers of the PTS.

8 Claims, 5 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 4

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Image

☐ 6. Document ID: US 5763490 A

L1: Entry 6 of 16 File: USPT Jun 9, 1998

US-PAT-NO: 5763490
DOCUMENT-IDENTIFIER: US 5763490 A

TITLE: Treating prostate cancer with tartrate ions

DATE-ISSUED: June 9, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lebioda; Lukasz	Columbia	SC		
Jakob; Clarissa G.	Columbia	SC		

US-CL-CURRENT: 514/574; 435/199

ABSTRACT:

A method is disclosed for treating prostate cancer in males by administration of tartrate ions from a tartrate derivative. The tartrate ions in the bloodstream bind to and inhibit prostatic acid phosphatase.

5 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 7. Document ID: WO 3006493 A2

L1: Entry 7 of 16 File: EPAB Jan 23, 2003

PUB-NO: WO003006493A2
DOCUMENT-IDENTIFIER: WO 3006493 A2
TITLE: HISTIDINE PHOSPHATASE INTERACTING PROTEIN WITH 180KD

PUBN-DATE: January 23, 2003

INVENTOR-INFORMATION:

NAME	COUNTRY
KELLNER, RONALD	DE
HOCK, BJOERN	DE

INT-CL (IPC): C07 K 14/00
EUR-CL (EPC): C07K014/47

ABSTRACT:

CHG DATE=20030403 STATUS=N>PHPIP-180 polypeptides and polynucleotides and methods for producing such polypeptides by recombinant techniques are disclosed. Also disclosed are methods for utilizing PHPIP-180 polypeptides and polynucleotides in diagnostic assays.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Image

☐ 8. Document ID: WO 2074796 A2

L1: Entry 8 of 16 File: EPAB Sep 26, 2002

PUB-NO: WO002074796A2
DOCUMENT-IDENTIFIER: WO 2074796 A2
TITLE: HISTIDINE PHOSPHATASE INTERACTING PROTEIN WITH 240KD

PUBN-DATE: September 26, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
HOCK, BJOERN	DE
DUECKER, KLAUS	DE
KELLNER, ROLAND	DE

INT-CL (IPC): C07 K 14/00
EUR-CL (EPC): C07K014/47

ABSTRACT:

CHG DATE=20021101 STATUS=O>PHPIP-240 polypeptides and polynucleotides and methods for producing such polypeptides by recombinant techniques are disclosed. Also disclosed are methods for utilizing PHPIP-240 polypeptides and polynucleotides in diagnostic assays.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Image

☐ 9. Document ID: WO 2070676 A2

L1: Entry 9 of 16 File: EPAB Sep 12, 2002

PUB-NO: WO002070676A2
DOCUMENT-IDENTIFIER: WO 2070676 A2
TITLE: USE OF PROTEIN HISTIDINE PHOSPHATASE

PUBN-DATE: September 12, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
KELLNER, ROLAND	DE
KLUMPP, SUSANNE	DE

INT-CL (IPC): C12 N 9/00
EUR-CL (EPC): C12N009/88; C12N009/16

ABSTRACT:

CHG DATE=20021002 STATUS=O>The invention relates to the use of polypeptides with protein histidine phosphatase activity derived from mammalians, antibodies directed against them and DNA or RNA sequences complementary to mRNA sequences encoding polypeptides with protein histidine phosphatase activity for the modulation of ATP-citrate lyase and treatment of correlated pathophysiologic functions.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw Desc | Image

☐ 10. Document ID: WO 2066507 A2

L1: Entry 10 of 16 File: EPAB Aug 29, 2002

PUB-NO: WO002066507A2
DOCUMENT-IDENTIFIER: WO 2066507 A2
TITLE: HISTIDINE PHOSPHATASE INTERACTING PROTEIN WITH 120KD

PUBN-DATE: August 29, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
HOCK, BJOERN	DE
DUECKER, KLAUS	DE
KELLNER, ROLAND	DE

INT-CL (IPC): C07 K 14/47; C12 N 15/12; C12 N 1/21; C07 K 16/46; C07 K 16/18; G01 N 33/68
EUR-CL (EPC): C07K014/47

ABSTRACT:

PHPIP-120 polypeptides and polynucleotides and methods for producing such polypeptides by recombinant techniques are disclosed. also disclosed are methods for utilizing PHPIP-120 polypeptides and polynucleotides in diagnostic assays.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw Desc | Image

☐ 11. Document ID: WO 2003006499 A2

L1: Entry 11 of 16 File: DWPI Jan 23, 2003

DERWENT-ACC-NO: 2003-221716
DERWENT-WEEK: 200321
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TITLE: New TPR1 polypeptide, useful in diagnostic assays and for identifying agonist or antagonist compounds of the TPR1 polypeptide, which are potentially useful in therapy

INVENTOR: HENTSCH, B; HOCK, B

PRIORITY-DATA: 2001EP-0116641 (July 13, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2003006499 A2	January 23, 2003	E	043	C07K014/47

INT-CL (IPC): C07 K 14/47

ABSTRACTED-PUB-NO: WO2003006499A
BASIC-ABSTRACT:

NOVELTY - A new TPR1 polypeptide comprising:

(a) a sequence encoded by a polynucleotide comprising the sequence having 2757 bp given in the specification;

(b) a sequence comprising 726-amino acid sequence given in the specification;

(c) a sequence having at least 95% identity with (B); or

(d) fragments or variants of (A)-(C).

The TPR1 ligand of (A)-(D) has the ability to bind specifically to Protein Histidine Phosphatase Interacting Partner receptor.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) a polynucleotide;

(2) an expression system comprising the polynucleotide capable of producing the polypeptide when the expression vector is present in a compatible host cell;

(3) a recombinant host cell comprising the vector or its membrane expressing the polypeptide;

(4) a process for producing the polypeptide;

(5) a fusion protein comprising the immunoglobulin Fc-region and the polypeptide;

(6) an antibody immunospecific for the polypeptide; and

(7) a method for screening to identify compounds that stimulate or inhibit the function or level of the polypeptide.

USE - The polypeptide is useful in diagnostic assays and for identifying agonist or antagonist compounds of the polypeptide TPR1 (claimed), which are potentially useful in therapy.

☐ 12. Document ID: WO 2003006493 A2

L1: Entry 12 of 16 File: DWPI Jan 23, 2003

DERWENT-ACC-NO: 2003-210420
DERWENT-WEEK: 200320
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TITLE: New Protein Histidine Phosphatase Interacting Partner of 180KD (PHPIP-180), useful in diagnostic assays and for identifying agonist or antagonist compounds of the PHPIP-180 polypeptide, which are potentially useful in therapy

INVENTOR: HOCK, B; KELLNER, R

PRIORITY-DATA: 2001EP-0116640 (July 13, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2003006493 A2	January 23, 2003	E	047	C07K014/00

INT-CL (IPC): C07 K 14/00

ABSTRACTED-PUB-NO: WO2003006493A
BASIC-ABSTRACT:

NOVELTY - A Protein Histidine Phosphatase Interacting Partner of 180KD (PHPIP-180) polypeptide comprising a 571 residue amino acid sequence (S1), encoded by a 3312 base pair sequence (S2), both given in the specification, having at least 95 % identity with (S1), or comprising fragments of them, is new. The PHPIP-180 ligand of (A)-(D) has the ability to bind specifically to Survivin or its variant.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a polynucleotide encoding the novel polypeptide;

(2) an expression vector comprising the polynucleotide of (1) capable of producing the polypeptide when the expression vector is present in a compatible host cell;

(3) a recombinant host cell comprising the vector of (2) or its membrane expressing the novel polypeptide;

(4) a process for producing the novel polypeptide;

(5) a fusion protein comprising the immunoglobulin Fc-region and the novel polypeptide;

(6) an antibody immunospecific for the novel polypeptide; and

(7) a method for screening to identify compounds that stimulate or inhibit the function or level of the novel polypeptide.

USE - The polypeptide is useful in diagnostic assays and for identifying agonist or antagonist compounds of the polypeptide PHPIP-180 (claimed), which are potentially useful in therapy.

13. Document ID: WO 200274796 A2

L1: Entry 13 of 16 File: DWPI Sep 26, 2002

DERWENT-ACC-NO: 2002-759879
DERWENT-WEEK: 200282
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TITLE: New human Protein Histidine Phosphatase Interacting Partner of 240kD polypeptides and polynucleotides, useful for diagnosing or treating diseases e.g. schizophrenia

INVENTOR: DUECKER, K; HOCK, B ; KELLNER, R

PRIORITY-DATA: 2001EP-0103780 (February 16, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200274796 A2	September 26, 2002	E	039	C07K014/00

INT-CL (IPC): C07 K 14/00

ABSTRACTED-PUB-NO: WO 200274796A
BASIC-ABSTRACT:

NOVELTY - Protein Histidine Phosphatase Interacting Partner of 240kD (PHPIP-240) ligand polypeptide (P1) comprising:

(a) a polypeptide comprising 1684-amino acid sequence and encoded by a polynucleotide having 7500 bp sequence; or

(b) a polypeptide having at least 95% identity with (a); or

(c) a fragment or variant of (a) or (b), is new.

DETAILED DESCRIPTION - (P1) has the ability to bind specifically to the PHP1 receptor having an amino acid sequence or its variant not given in the specification.

INDEPENDENT CLAIMS are also included for:

(1) a polynucleotide comprising:

(a) a sequence having at least 95% identity with the and encoding (P1);

(b) a sequence having at least 100 nucleotides or its fragment having at least 15 nucleotides obtained by screening a library under stringent hybridization conditions with a labeled probe having the 7500 bp sequence;

(c) a RNA equivalent of (1.1) or (1.2); or

(d) a variant, fragment or complement of (1.1)-(1.3);

(2) an expression system comprising a polynucleotide capable of producing (P1), when the expression vector is present in a compatible host cell;

(3) a recombinant host cell comprising the expression vector, or its membrane expressing (P1);

(4) producing (P1);

(5) a fusion protein consisting of the immunoglobulin Fc-region and (P1);

(6) an antibody immunospecific for (P1); or

(7) screening compounds that stimulate or inhibit the function or level of (P1).

ACTIVITY - Cytostatic; Neuroleptic; Antianemic.

No suitable data given.

MECHANISM OF ACTION - Vaccine; PHPIP-240-Antagonist; PHPIP-240-Agonist.

USE - The PHPIP-240 ligand polypeptides and polynucleotides are useful for diagnosing or treating diseases or disorders e.g. schizophrenia, congenital dyserythropoietic anemia type III or sarcoma, or as vaccines.

☐ 14. Document ID: WO 200270676 A2

L1: Entry 14 of 16 File: DWPI Sep 12, 2002

DERWENT-ACC-NO: 2002-723261
DERWENT-WEEK: 200278
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TITLE: Polypeptides with Protein Histidine Phosphatase activity useful for modulating ATP-citrate-lyase activity, particularly for treating e.g. hyperlipidemia, cardiovascular diseases or tumors, or for promoting fat loss

INVENTOR: KELLNER, R; KLUMPP, S

PRIORITY-DATA: 2001EP-0105774 (March 8, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200270676 A2	September 12, 2002	E	022	C12N009/00

INT-CL (IPC): C12 N 9/00

ABSTRACTED-PUB-NO: WO 200270676A
BASIC-ABSTRACT:

NOVELTY - A polypeptide with the biological activity of a Protein Histidine Phosphatase (PHP), which has a high specificity for phosphohistidine or a homologue variant, useful for modulating ATP-citrate-lyase (EC 4.1.3.8) activity, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) an antibody, or its fragment, directed to the polypeptide with PHP activity, useful for modulating ATP-citrate-lyase activity; and

(2) a DNA sequence, which is complementary to the mRNA sequence of PHP, with at least one of the following sequences comprising 374, 48, 99 or 132 bp fully defined in the specification.

ACTIVITY - Antilipemic; Cardiovascular; Anorectic; Anti-inflammatory; Cytostatic; Neuroprotective.

No biological data given.

MECHANISM OF ACTION - ATP-citrate-lyase modulator.

USE - The polypeptide with PHP activity, the antibody, and the DNA are useful for modulating ATP-citrate-lyase activity, or for the manufacture a medicament for treating pathophysiologic conditions susceptible to the modulation of ATP-citrate-lyase activity (e.g. hyperlipidemia, hypercholesterolemia, cardiovascular diseases, obesity, inflammatory diseases, tumors, diseases of the nervous system or hypocitraturia). These are also useful for the manufacture of a medicament for controlling weight, promoting fat loss and for appetite suppression (all claimed). These diseases also include Alzheimer's disease, senile dementia, scrapie, osteoarthritis, psoriasis, multiple sclerosis, dermatitis, Raynaud's syndrome, or Crohn's disease.

15. Document ID: WO 200266507 A2

L1: Entry 15 of 16 File: DWPI Aug 29, 2002

DERWENT-ACC-NO: 2002-674915
DERWENT-WEEK: 200272
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TITLE: New Protein Histidine Phosphatase Interacting Partner of 120kD ligand polypeptides, useful for diagnosing or treating diseases e.g. autism, anemia or malignant fibrous histocytomas

INVENTOR: DUECKER, K; HOCK, B ; KELLNER, R

PRIORITY-DATA: 2001EP-0103779 (February 16, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200266507 A2	August 29, 2002	E	041	C07K014/47

INT-CL (IPC): C07 K 14/47; C07 K 16/18; C07 K 16/46; C12 N 1/21; C12 N 15/12; G01 N 33/68

ABSTRACTED-PUB-NO: WO 200266507A
BASIC-ABSTRACT:

NOVELTY - An isolated Protein Histidine Phosphatase Interacting Partner of 120kD (PHPIP-120) ligand polypeptide comprising:

(a) a polypeptide consisting of a sequence (P1) having 1047 amino acids and encoded by a polynucleotide comprising a sequence (N1) having 3732 bp;

(b) a polypeptide comprising a sequence having at least 95% identity to (a); or

(c) fragment and variant of (a) or (b), is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) a polynucleotide comprising:

(i) a sequence having at least 95% identity to (N1) and encoding a polypeptide sequence having at least 95% identity to (P1);

(ii) a sequence having at least 100 nucleotides obtained by screening a library under stringent hybridization conditions with a labeled probe having (N1) or its fragment having at least 15 nucleotides; or

(iii) variant, fragment or complement of (i) or (ii);

(2) an expression system comprising the polynucleotide capable of producing the polypeptide, where the expression vector is present in a compatible host cell;

(3) a recombinant host cell comprising the expression vector or its membrane expressing the polypeptide;

(4) a process for producing the polypeptide;

(5) a fusion protein consisting of the Immunoglobulin Fc-region and the polypeptide;

(6) an antibody immunospecific for the polypeptide; or

(7) a method for screening compounds that stimulate or inhibit the function or level of the polypeptide.

ACTIVITY - Cytostatic; Nootropic; Antianemic.

No biological data given.

MECHANISM OF ACTION - PHPIP-120-Agonist; PHPIP-120-Antagonist; Gene therapy.

USE - The polynucleotide is useful for chromosome localization studies or for tissue expression studies. The polypeptide is useful for treating diseases e.g. autism, anemia or malignant fibrous histocytomas. The polynucleotide and polypeptide are also useful in diagnostic assays or as vaccines against the mentioned diseases.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Image

☐ 16. Document ID: ZA 200108129 A WO 200052175 A1 AU 200038080 A NO 200104261 A EP 1159430 A1 BR 200008607 A CZ 200103172 A3 KR 2002002400 A CN 1342205 A SK 200101224 A3 HU 200200241 A2 JP 2002537814 W

L1: Entry 16 of 16 File: DWPI Mar 26, 2003

DERWENT-ACC-NO: 2000-572187
DERWENT-WEEK: 200327
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TITLE: Histidine phosphatase, useful for diagnosis and treatment of cancers, immune disorders, viral infection, genetic disorders, and heart disease

INVENTOR: KELLNER, R; KLUMPP, S

PRIORITY-DATA: 1999DE-1009388 (March 4, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
ZA 200108129 A	March 26, 2003		049	C12N000/00
WO 200052175 A1	September 8, 2000	E	039	C12N015/55
AU 200038080 A	September 21, 2000		000	C12N015/55
NO 200104261 A	September 3, 2001		000	C12N000/00
EP 1159430 A1	December 5, 2001	E	000	C12N015/55
BR 200008607 A	January 2, 2002		000	C12N015/55
CZ 200103172 A3	December 12, 2001		000	C12N015/55
KR 2002002400 A	January 9, 2002		000	C07K014/435
CN 1342205 A	March 27, 2002		000	C12N015/55
SK 200101224 A3	June 4, 2002		000	C12N015/55
HU 200200241 A2	May 28, 2002		000	C12N015/55
JP 2002537814 W	November 12, 2002		041	C12N015/09

INT-CL (IPC): A61 K 38/46; A61 P 3/00; A61 P 9/00; A61 P 25/00; A61 P 35/00; A61 P 43/00; C07 K 14/435; C07 K 16/40; C12 N 0/00; C12 N 9/16; C12 N 15/09; C12 N 15/55

ABSTRACTED-PUB-NO: WO 200052175A
BASIC-ABSTRACT:

NOVELTY - A polypeptide (I) with the biological activity of a histidine phosphatase which has a high specificity for phosphohistidine and a molecular weight of 13000-15000, obtainable by purification from mammalian tissue by at least one anion exchange chromatography, one gel filtration and one affinity chromatography step, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a polypeptide (II) with the biological activity of a histidine phosphatase which has a high specificity for phosphohistidine and a molecular weight of 13000-15000, comprising the amino acid sequence:
(M)AVADLALIPDVDIDSDGVFKYVLIRVHSAPRSGAPAAESKEIVRGYKWAEYHADIYDKVSGDMQKQGCDC-ECLGGGRISHQSQDKKIHVYGYSMAYGPAQHAISTEKIKAKYPDYEVTWANDGY;

(2) a polypeptide (III) with the biological activity of a histidine phosphatase which has a high specificity for phosphohistidine and a molecular weight of 13000-15000, the amino acid sequence of which has a homology of 64-99% compared with the sequence DCECLGGGRISHQSQDX1KIHVYGYSM- X2YGX3AQH;

(3) a DNA (IV) coding for (I), (II) or (III);

(4) pharmaceutical preparation comprising (I), (II) or (III), where appropriate, together with suitable excipients, carriers and other active ingredients; and

(5) an antibody directed to (I), (II) or (III).

X1 = K or R;

X2 = A or G; and

X3 = P or R.

ACTIVITY - Cytostatic; immunomodulatory; virucide; cardiant.

No biological data is given.

MECHANISM OF ACTION - None given.

USE - The histidine phosphatase can be used for diagnosis and treatment of pathological states of cell regulation and cell growth. These include cancers, immune disorders, viral infection, genetic disorders, and heart disease. The histidine phosphatase can also be used for identifying agonists and antagonists which can be used to treat conditions associated with N-phosphorylation imbalance.

Terms	Documents
histidine phosphatase or histidine protein phosphatase	16

```
=> file .nash
=> s histidine (2w) phosphatase
L1          39 FILE MEDLINE
L2          77 FILE CAPLUS
L3          47 FILE SCISEARCH
L4          19 FILE LIFESCI
L5          52 FILE BIOSIS
L6          40 FILE EMBASE

TOTAL FOR ALL FILES
L7         274 HISTIDINE (2W) PHOSPHATASE

=> s l7 and (mammalian or humanor rabbit or mouse or rat or pig)
TOTAL FOR ALL FILES
L14         80 L7 AND (MAMMALIAN OR HUMANOR RABBIT OR MOUSE OR RAT OR PIG)

=> s l7 and (mammalian or human or rabbit or mouse or rat or pig)
TOTAL FOR ALL FILES
L21        108 L7 AND (MAMMALIAN OR HUMAN OR RABBIT OR MOUSE OR RAT OR PIG)

=> dup rem l21
PROCESSING COMPLETED FOR L21
L22         54 DUP REM L21 (54 DUPLICATES REMOVED)

=> s l21 not 2000-2003/py
TOTAL FOR ALL FILES
L29         74 L21 NOT 2000-2003/PY

=> dup rem l29
PROCESSING COMPLETED FOR L29
L30         36 DUP REM L29 (38 DUPLICATES REMOVED)

=> d ibib abs

L30  ANSWER 1 OF 36  SCISEARCH  COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER:    1999:295312  SCISEARCH
THE GENUINE ARTICLE: 185HT
TITLE:               Cyanobacterial PPP family protein phosphatases possess
                     multifunctional capabilities and are resistant to
                     microcystin-LR
AUTHOR:              Shi L; Carmichael W W; Kennelly P J (Reprint)
CORPORATE SOURCE:    VIRGINIA POLYTECH INST & STATE UNIV, DEPT BIOCHEM,
                     BLACKSBURG, VA 24061 (Reprint); VIRGINIA POLYTECH INST &
                     STATE UNIV, DEPT BIOCHEM, BLACKSBURG, VA 24061; WRIGHT
                     STATE UNIV, DEPT BIOL SCI, DAYTON, OH 45435
COUNTRY OF AUTHOR:   USA
SOURCE:              JOURNAL OF BIOLOGICAL CHEMISTRY, (9 APR 1999) Vol. 274,
                     No. 15, pp. 10039-10046.
                     Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC,
                     9650 ROCKVILLE PIKE, BETHESDA, MD 20814.
                     ISSN: 0021-9258.
DOCUMENT TYPE:       Article; Journal
FILE SEGMENT:        LIFE
LANGUAGE:            English
REFERENCE COUNT:     58
                    *ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*
AB       The structural gene for a putative PPP family protein-serine/threonine
     phosphatase from the microcystin-producing cyanobacterium Microcystis
     aeruginosa PCC 7820, pp1-cyanol, was cloned. The sequence of the predicted
     gene product, PP1-cyanol, was 98% identical to that of the predicted
     product of an open reading frame, pp1-cyano2 from a cyanobacterium that
     does not produce microcystins, M. aeruginosa UTEX 2063, By contrast,
     PP1-cyanol displayed less than 20% identity with other PPP family protein
     phosphatases from eukaryotic, archaeal, or other bacterial organisms.
     PP1-cyanol and PP1-cyano2 were expressed in Escherichia coil and purified
     to homogeneity. Both enzymes exhibited divalent metal dependent
     phosphohydrolase activity in vitro toward phosphoserine- and
     phosphotyrosine-containing proteins and 3-phosphohistidine- and
     phospholysine-containing amino acid homopolymers, This multifunctional
     potential also was apparent in samples of PP1-cyanol and PP1-cyano2
```

isolated from M. aeruginosa, Catalytic activity was insensitive to okadaic acid or the cyanobacterially produced cyclic heptapeptide, microcystin-LR, both potent inhibitors of **mammalian** PP1 and PP2A. PP1-cyanol and PP1-cyano2 displayed diadenosine tetraphosphatase activity in vitro. Diadenosine tetraphosphatases share conserved sequence features with PPP family protein phosphatases. The diadenosine tetraphosphatase activity of PP1-cyanol and PP1-cyano2 confirms that these enzymes share a common catalytic mechanism.

=> d ibib abs 2

L30 ANSWER 2 OF 36 MEDLINE
ACCESSION NUMBER: 1999303093 MEDLINE
DOCUMENT NUMBER: 99303093 PubMed ID: 10376600
TITLE: Emergence of vancomycin tolerance in Streptococcus pneumoniae.
COMMENT: Comment in: Nature. 1999 Jun 10;399(6736):524-5, 527
Comment in: Nature. 1999 Jun 10;399(6736):590-3
AUTHOR: Novak R; Henriques B; Charpentier E; Normark S; Tuomanen E
CORPORATE SOURCE: Dept of Infectious Diseases, St. Jude Children's Research Hospital, Memphis, Tennessee 38105, USA.
SOURCE: NATURE, (1999 Jun 10) 399 (6736) 590-3.
Journal code: 0410462. ISSN: 0028-0836.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF140356
ENTRY MONTH: 199906
ENTRY DATE: Entered STN: 19990714
Last Updated on STN: 19990714
Entered Medline: 19990630

AB Streptococcus pneumoniae, the pneumococcus, is the most common cause of sepsis and meningitis. Multiple-antibiotic-resistant strains are widespread, and vancomycin is the antibiotic of last resort. Emergence of vancomycin resistance in this community-acquired bacterium would be catastrophic. Antibiotic tolerance, the ability of bacteria to survive but not grow in the presence of antibiotics, is a precursor phenotype to resistance. Here we show that loss of function of the VncS histidine kinase of a two-component sensor-regulator system in S. pneumoniae produced tolerance to vancomycin and other classes of antibiotic. Bacterial two-component systems monitor environmental parameters through a sensor **histidine**-kinase/**phosphatase**, which phosphorylates/dephosphorylates a response regulator that in turn mediates changes in gene expression. These results indicate that signal transduction is critical for the bactericidal activity of antibiotics. Experimental meningitis caused by the vncS mutant failed to respond to vancomycin. Clinical isolates tolerant to vancomycin were identified and DNA sequencing revealed nucleotide alterations in vncS. We conclude that broad antibiotic tolerance of S. pneumoniae has emerged in the community by a molecular mechanism that eliminates sensitivity to the current cornerstone of therapy, vancomycin.

=> d ibib abs 3-
YOU HAVE REQUESTED DATA FROM 34 ANSWERS - CONTINUE? Y/(N):y

L30 ANSWER 3 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 1999:644933 SCISEARCH
THE GENUINE ARTICLE: 226GJ
TITLE: Bovine liver phosphoamidase as a protein **histidine** /lysine **phosphatase**
AUTHOR: Hiraishi H; Yokoi F; Kumon A (Reprint)
CORPORATE SOURCE: SAGA MED SCH, DEPT BIOCHEM, NABESHIMA 5-1-1, SAGA 8498501, JAPAN (Reprint); SAGA MED SCH, DEPT BIOCHEM, SAGA 8498501, JAPAN
COUNTRY OF AUTHOR: JAPAN
SOURCE: JOURNAL OF BIOCHEMISTRY, (AUG 1999) Vol. 126, No. 2, pp. 368-374.
Publisher: JAPANESE BIOCHEMICAL SOC, ISHIKAWA BLDG-3F,

25-16 HONGO-5-CHOME, BUNKYO-KU, TOKYO 113, JAPAN.
ISSN: 0021-924X.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 46
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A 13-kDa phosphoamidase was isolated as a single band on SDS-PAGE from bovine liver, Its Stokes' radius, sedimentation coefficient, molecular mass, and optimal pH were estimated to be 1.6 nm, 1.8 s, 13 kDa, and 6.5, respectively. The enzyme released P-i from 3-phosphohistidine, 6-phospholysine, and amidophosphate at rates of 0.9, 0.6, and 2.6 mu mol/min/mg protein, respectively. However, it did not dephosphorylate phosphocreatine, N-omega-phosphoarginine, imidodiphosphate, or O-phosphorylated compounds including inorganic pyrophosphate. It also dephosphorylated succinic thiokinase and nucleoside diphosphate kinase autophosphorylated at His residues, indicating that it works as a protein **histidine phosphatase**. A thiol reagent, 30 mu M N-ethylmaleimide, depressed the activity by half, while a thiol compound, 2-mercaptoethanol, protected the enzyme from heat-inactivation. Five millimolar divalent cations, such as Mg2+ and Mn2+, and 5 mM EDTA, had no effect on the activity.

L30 ANSWER 4 OF 36 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 1999189241 MEDLINE
DOCUMENT NUMBER: 99189241 PubMed ID: 10087200
TITLE: Multiple inositol polyphosphate phosphatase: evolution as a distinct group within the **histidine phosphatase** family and chromosomal localization of the **human** and **mouse** genes to chromosomes 10q23 and 19.
AUTHOR: Chi H; Tiller G E; Dasouki M J; Romano P R; Wang J; O'keefe R J; Puzas J E; Rosier R N; Reynolds P R
CORPORATE SOURCE: Department of Orthopaedics, University of Rochester School of Medicine and Dentistry, Rochester, New York 14642, USA.
CONTRACT NUMBER: AR01925 (NIAMS)
AR38945 (NIAMS)
AR44091 (NIAMS)
+
SOURCE: GENOMICS, (1999 Mar 15) 56 (3) 324-36.
Journal code: 8800135. ISSN: 0888-7543.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF046908; GENBANK-AF046909; GENBANK-AF046910; GENBANK-AF046911; GENBANK-AF046912; GENBANK-AF046913; GENBANK-AF046914; GENBANK-AF046915
ENTRY MONTH: 199905
ENTRY DATE: Entered STN: 19990607
Last Updated on STN: 19990607
Entered Medline: 19990524

AB Multiple inositol polyphosphate phosphatase is the only enzyme known to hydrolyze the abundant metabolites inositol pentakisphosphate and inositol hexakisphosphate. We have previously demonstrated that the chick homolog of multiple inositol polyphosphate phosphatase, designated HiPER1, has a role in growth plate chondrocyte differentiation. The relationship of these enzymes to intracellular signaling is obscure, and as part of our investigation we have examined the murine ((MMU)Minpp1) and **human** ((HSA)MINPP1) homologs. Northern blot analysis demonstrated expression of ((MMU)Minpp1 in a variety of **mouse** tissues, comparable to the expression of other **mammalian** homologs, but less restricted than the expression of HiPER1 in chick. A purified (MMU)Minpp1 fusion protein cleaved phosphate from inositol (1,3,4,5)-tetrakisphosphate and para-nitrophenyl phosphate. When the presumptive active site histidine was altered to alanine by site-directed mutagenesis, enzyme activity was abolished, confirming the classification of (MMU)Minpp1 as a **histidine phosphatase**. The amino acid sequences of the murine and **human** MINPP proteins share >80% identity with the **rat** enzyme and >56% identity with HiPER1, with conservation of the C-terminal consensus sequence that retains proteins in the endoplasmic

reticulum. The intron/exon structure of the **mammalian** (MMU)Minpp1 and (HSA)MINPP1 genes is also conserved compared to the chick HiPER1 gene. Sequence analysis of plant and fruit fly MINPP homologs supports the hypothesis that the MINPP enzymes constitute a distinct evolutionary group within the **histidine phosphatase** family. We have mapped (HSA)MINPP1 to **human** chromosome 10q23 by fluorescence in situ hybridization, YAC screening, and radiation hybrid mapping. This assignment places (HSA)MINPP1 in a region of chromosome 10 that is frequently mutated in **human** cancers and places (HSA)MINPP1 proximal to the tumor suppressor PTEN, which maps to 10q23.3. Using a radiation hybrid panel, we localized (MMU)Minpp1 to a region of **mouse** chromosome 19 that includes the murine homolog of Pten. The evolutionary conservation of this novel enzyme within the inositol polyphosphate pathway suggests a significant role for multiple inositol polyphosphate phosphatase throughout higher eukaryotes.
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L30 ANSWER 5 OF 36 MEDLINE DUPLICATE 2
ACCESSION NUMBER: 1999120488 MEDLINE
DOCUMENT NUMBER: 99120488 PubMed ID: 9923613
TITLE: The **human** and **rat** forms of multiple inositol polyphosphate phosphatase: functional homology with a **histidine** acid **phosphatase** up-regulated during endochondral ossification.
AUTHOR: Caffrey J J; Hidaka K; Matsuda M; Hirata M; Shears S B
CORPORATE SOURCE: Inositide Signaling Group, National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC 27709, USA.. caffrey@niehs.nih.gov
SOURCE: FEBS LETTERS, (1999 Jan 8) 442 (1) 99-104.
Journal code: 0155157. ISSN: 0014-5793.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF084943; GENBANK-AF084944
ENTRY MONTH: 199902
ENTRY DATE: Entered STN: 19990223
Last Updated on STN: 19990223
Entered Medline: 19990211
AB We have derived the full-length sequences of the **human** and **rat** forms of the multiple inositol polyphosphate phosphatase (MIPP); their structural and functional comparison with a chick **histidine** acid **phosphatase** (HiPER1) has revealed new information: (1) MIPP is approximately 50% identical to HiPER1, but the ER-targeting domains are divergent; (2) MIPP appears to share the catalytic requirement of **histidine** acid **phosphatases**, namely, a C-terminal His residue remote from the RHGxRxP catalytic motif; (3) **rat** MIPP mRNA is up-regulated during chondrocyte hypertrophy. The latter observation provides a context for proposing that MIPP may aid bone mineralization and salvage the inositol moiety prior to apoptosis.

L30 ANSWER 6 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 1998:165285 SCISEARCH
THE GENUINE ARTICLE: YX516
TITLE: Molecular cloning and functional expression of mannitol-1-phosphatase from the apicomplexan parasite Eimeria tenella
AUTHOR: Liberator P (Reprint); Anderson J; Feiglin M; Sardana M; Griffin P; Schmatz D; Myers R W
CORPORATE SOURCE: MERCK RES LABS, DEPT PARASITE BIOCHEM & CELL BIOL, POB 2000, MAIL LOCAT R80Y-265, RAHWAY, NJ 07065 (Reprint); MERCK RES LABS, DEPT MOL DESIGN & DIVERS, RAHWAY, NJ 07065; MERCK RES LABS, DEPT BIOL CHEM, W POINT, PA 19486
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (13 FEB 1998) Vol. 273, No. 7, pp. 4237-4244.
Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814.
ISSN: 0021-9258.
DOCUMENT TYPE: Article; Journal

FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 38

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A metabolic pathway responsible for the biosynthesis and utilization of mannitol is present in the seven species of Eimeria that infect chickens, but is not in the avian host, Mannitol-1-phosphatase (M1Pase), a key enzyme for mannitol biosynthesis, is a highly substrate-specific phosphatase and, accordingly, represents an attractive chemotherapeutic target, Amino acid sequence of tryptic peptides obtained from biochemically purified Eimeria tenella M1Pase was used to synthesize degenerate oligonucleotide hybridization probes, Using these reagents, a partial genomic clone and full-length cDNA clones have been isolated and characterized, The de deduced amino acid sequence of E. tenella M1Pase shows limited overall homology to members of the phosphohistidine family of phosphatases, This limited homology to other **histidine phosphatases** does, however, include several conserved residues that have been shown to be essential for their catalytic activity, Kinetic parameters of recombinant M1Pase expressed in bacteria are essentially identical to those of the biochemically purified preparation from E., tenella, Moreover, recombinant M1Pase is subject to active site directed, hydroxylamine-reversible inhibition by the histidine-selective acylating reagent diethyl pyrocarbonate. These results indicate the presence of an essential histidine residue(s) at the M1Pase active site, as predicted for a **histidine phosphatase**.

L30 ANSWER 7 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 1998:429770 SCISEARCH
THE GENUINE ARTICLE: ZQ805
TITLE: Isolation, characterization, molecular gene cloning, and sequencing of a novel phytase from Bacillus subtilis
AUTHOR: Kerovuo J (Reprint); Lauraeus M; Nurminen P; Kalkkinen N; Apajalahti J
CORPORATE SOURCE: CULTOR CORP TECHNOL CTR, FIN-02460 KANTVIK, FINLAND (Reprint); UNIV HELSINKI, INST BIOTECHNOL, HELSINKI, FINLAND
COUNTRY OF AUTHOR: FINLAND
SOURCE: APPLIED AND ENVIRONMENTAL MICROBIOLOGY, (JUN 1998) Vol. 64, No. 6, pp. 2079-2085.
Publisher: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW, WASHINGTON, DC 20005-4171.
ISSN: 0099-2240.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 38

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The Bacillus subtilis strain VTT E-68013 was chosen for purification and characterization of its excreted phytase. Purified enzyme had maximal phytase activity at pH 7 and 55 degrees C. Isolated enzyme required calcium for its activity and/or stability and was readily inhibited by EDTA. The enzyme proved to be highly specific since, of the substrates tested, only phytate, ADP, and ATP were hydrolyzed (100, 75, and 50% of the relative activity, respectively), The phytase gene (phyC) was cloned from the B. subtilis VTT E-68013 genomic library. The deduced amino acid sequence (383 residues) showed no homology to the sequences of other phytases nor to those of any known phosphatases. PhyC did not have the conserved RHGXRXP sequence found in the active site of known phytases, and therefore PhyC appears not to be a member of the phytase subfamily of **histidine** acid **phosphatases** but a novel enzyme having phytase activity. Due to its pH profile and optimum, it could be an interesting candidate for feed applications.

L30 ANSWER 8 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 97:106186 SCISEARCH
THE GENUINE ARTICLE: WE411
TITLE: The phytase subfamily of **histidine** acid **phosphatases**: Isolation of genes for two novel phytases from the fungi Aspergillus terreus and Myceliophthora thermophila
AUTHOR: Mitchell D B; Vogel K; Weimann B J; Pasamontes L; vanLoon

A P G M (Reprint)
CORPORATE SOURCE: F HOFFMANN LA ROCHE & CIE AG, VITAMINS & FINE CHEM DIV, BIOTECHNOL SECT, CH-4070 BASEL, SWITZERLAND (Reprint); F HOFFMANN LA ROCHE & CIE AG, VITAMINS & FINE CHEM DIV, BIOTECHNOL SECT, CH-4070 BASEL, SWITZERLAND
COUNTRY OF AUTHOR: SWITZERLAND
SOURCE: MICROBIOLOGY-UK, (JAN 1997) Vol. 143, Part 1, pp. 245-252. Publisher: SOC GENERAL MICROBIOLOGY, HARVEST HOUSE 62 LONDON ROAD, READING, BERKS, ENGLAND RG1 5AS. ISSN: 1350-0872.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 22

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Phytases catalyse the hydrolysis of phytate (myo-inositol hexakisphosphate) to myo-inositol and inorganic phosphate. In this study genes encoding novel phytases from two different filamentous fungi, Aspergillus terreus strain 9A-1 and Myceliophthora thermophila were isolated. The encoded PhyA phytase proteins show 60% (A. terreus) and 48% (M. thermophila) identity, respectively, to the PhyA of Aspergillus niger and have 21-29% identity compared to other **histidine** acid **phosphatases**. All three PhyA proteins, in contrast to the A. niger pH 2 . 5-optimum acid phosphatase, prefer phytic acid as substrate and show enzyme activity at a broad range of acidic pH values. Based on their enzyme characteristics and protein sequence homology, the phytases form a novel subclass of the **histidine** acid **phosphatase** family.

L30 ANSWER 9 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 97:701099 SCISEARCH
THE GENUINE ARTICLE: XV962
TITLE: Two tandemly arrayed genes encode the (**histidine**) secretory acid **phosphatases** of Leishmania donovani
AUTHOR: Shakarian A M; Ellis S L; Mallinson D J; Olafson R W; Dwyer D M (Reprint)
CORPORATE SOURCE: NIAID, CELL BIOL SECT, PARASIT DIS LAB, DIV INTRAMURAL RES, NIH, BLDG 4, ROOM 126, BETHESDA, MD 20892 (Reprint); NIAID, CELL BIOL SECT, PARASIT DIS LAB, DIV INTRAMURAL RES, NIH, BETHESDA, MD 20892; UNIV VICTORIA, DEPT BIOCHEM & MICROBIOL, VICTORIA, BC V8W 2Y2, CANADA
COUNTRY OF AUTHOR: USA; CANADA
SOURCE: GENE, (1 SEP 1997) Vol. 196, No. 1-2, pp. 127-137. Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS. ISSN: 0378-1119.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 29

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Leishmania donovani promastigotes constitutively secrete a glycosylated and phosphorylated acid phosphatase activity. This secretory acid phosphatase (SAcP) was purified from L. donovani culture supernatants and amino-acid sequence was obtained from both the N-terminus and a tryptic peptide fragment derived from the isolated protein. A polymerase chain reaction (PCR)-based strategy, using degenerate oligo primers designed from the amino-acid sequence data, identified two single-copy, tandemly arrayed open reading frames (ORFs) capable of encoding the L. donovani SAcP (SAcP-1, 2052 bp and SAcP-2, 2124 bp). Both SAcP-1 and -2 were shown to be actively transcribed by L. donovani promastigotes by reverse transcription (RT) and PCR amplification. The deduced amino-acid sequences of SAcP-1 and SAcP-2 show high conservation to each other in four regions: a 23-amino-acid signal peptide; a catalytic domain containing several potential N-linked glycosylation sites; a Ser/Thr-rich repeat region containing multiple potential phosphorylation sites and a common C-terminus. Within the catalytic domain, the L. donovani SAcPs possess two conserved consensus sequences characteristic of **histidine** acid **phosphatases** (AcPs). Furthermore, antisera to native L. donovani SAcP immunoprecipitated in vitro transcription/translation products of

both SAcP-1 and SAcP-2. Cumulatively, these data indicate that the acid phosphatase activity constitutively secreted by L. donovani promastigotes is composed of two (histidine) AcP isoforms that are encoded by SAcP-1 and SAcP-2, respectively. (C) 1997 Elsevier Science B.V.

L30 ANSWER 10 OF 36 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 1998028656 MEDLINE
DOCUMENT NUMBER: 98028656 PubMed ID: 9359836
TITLE: Molecular cloning and expression of a **rat** hepatic multiple inositol polyphosphate phosphatase.
AUTHOR: Craxton A; Caffrey J J; Burkhart W; Safrany S T; Shears S B
CORPORATE SOURCE: Laboratory of Signal Transduction, National Institute of Environmental Health Sciences, Research Triangle Park, NC 27709, USA.
SOURCE: BIOCHEMICAL JOURNAL, (1997 Nov 15) 328 (Pt 1) 75-81.
Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF012714
ENTRY MONTH: 199801
ENTRY DATE: Entered STN: 19980122
Last Updated on STN: 19980122
Entered Medline: 19980108

AB The characterization of the multiple inositol polyphosphate phosphatase (MIPP) is fundamental to our understanding of how cells control the signalling activities of 'higher' inositol polyphosphates. We now describe our isolation of a 2.3 kb cDNA clone of a **rat** hepatic form of MIPP. The predicted amino acid sequence of MIPP includes an 18 amino acid region that aligned with approximately 60% identity with the catalytic domain of a fungal inositol hexakisphosphate phosphatase (phytase A); the similarity encompassed conservation of the RHGXRXP signature of the **histidine** acid **phosphatase** family. A histidine-tagged, truncated form of MIPP was expressed in Escherichia coli and the enzymic specificity of the recombinant protein was characterized: Ins(1,3,4,5,6)P5 was hydrolysed, first to Ins(1,4,5,6)P4 and then to Ins(1,4,5)P3, by consecutive 3- and 6-phosphatase activities. Inositol hexakisphosphate was catabolized without specificity towards a particular phosphate group, but in contrast, MIPP only removed the beta-phosphate from the 5-diphosphate group of diphosphoinositol pentakisphosphate. These data, which are consistent with the substrate specificities of native (but not homogeneous) MIPP isolated from **rat** liver, provide the first demonstration that a single enzyme is responsible for this diverse range of specific catalytic activities. A 2.5 kb transcript of MIPP mRNA was present in all **rat** tissues that were examined, but was most highly expressed in kidney and liver. The predicted C-terminus of MIPP is comprised of the tetrapeptide SDEL, which is considered a signal for retaining soluble proteins in the lumen of the endoplasmic reticulum; the presence of this sequence provides a molecular explanation for our earlier biochemical demonstration that the endoplasmic reticulum contains substantial MIPP activity [Ali, Craxton and Shears (1993) J. Biol. Chem. 268, 6161-6167].

L30 ANSWER 11 OF 36 MEDLINE DUPLICATE 4
ACCESSION NUMBER: 96214507 MEDLINE
DOCUMENT NUMBER: 96214507 PubMed ID: 8634242
TITLE: Crystal structure of the **rat** liver fructose-2,6-bisphosphatase based on selenomethionine multiwavelength anomalous dispersion phases.
AUTHOR: Lee Y H; Ogata C; Pflugrath J W; Levitt D G; Sarma R; Banaszak L J; Pilkis S J
CORPORATE SOURCE: Department of Biochemistry, University of Minnesota, Minneapolis 55455, USA.
CONTRACT NUMBER: R37-DK38354 (NIDDK)
SOURCE: BIOCHEMISTRY, (1996 May 14) 35 (19) 6010-9.
Journal code: 0370623. ISSN: 0006-2960.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 199607
ENTRY DATE: Entered STN: 19960719
Last Updated on STN: 19960719
Entered Medline: 19960708

AB The crystal structure of the recombinant fructose-2,6-bisphosphatase domain, which covers the residues between 251 and 440 of the **rat** liver bifunctional enzyme, 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase, was determined by multiwavelength anomalous dispersion phasing and refined at 2.5 A resolution. The selenomethionine-substituted protein was induced in the methionine auxotroph, Escherichia coli DL41DE3, purified, and crystallized in a manner similar to that of the native protein. Phase information was calculated using the multiwavelength anomalous dispersion data collected at the X-ray wavelengths near the absorption edge of the K-shell alpha electrons of selenium. The fructose-2,6-bisphosphatase domain has a core alpha/beta structure which consists of six stacked beta-strands, four parallel and two antiparallel. The core beta-sheet is surrounded by nine alpha-helices. The catalytic site, as defined by a bound phosphate ion, is positioned near the C-terminal end of the beta-sheet and close to the N-terminal end of an alpha-helix. The active site pocket is funnel-shaped. The narrow opening of the funnel is wide enough for a water molecule to pass. The key catalytic residues, including His7, His141, and Glu76, are near each other at the active site and probably function as general acids and/or bases during a catalytic cycle. The inorganic phosphate molecule is bound to an anion trap formed by Arg6, His7, Arg56, and His141. The core structure of the Fru-2,6-P2ase is similar to that of the yeast phosphoglycerate mutase and the **rat** prostatic acid phosphatase. However, the structure of one of the loops near the active site is completely different from the other family members, perhaps reflecting functional differences and the nanomolar range affinity of Fru-2,6-P2ase for its substrate. The imidazole rings of the two key catalytic residues, His7 and His141, are not parallel as in the yeast phosphoglycerate mutase. The crystal structure is used to interpret the existing chemical data already available for the bisphosphatase domain. In addition, the crystal structure is compared with two other proteins that belong to the **histidine phosphatase** family.

L30 ANSWER 12 OF 36 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1995:286496 BIOSIS
DOCUMENT NUMBER: PREV199598300796
TITLE: Protein **histidine phosphatase** activity of protein phosphatases 1, 2A and 2C and inhibition by okadaic acid.
AUTHOR(S): Matthews, Harry R.; Pesis, Karen; Kim, Younhee
CORPORATE SOURCE: Univ. California Davis, Davis, CA 95616 USA
SOURCE: FASEB Journal, (1995) Vol. 9, No. 6, pp. A1347.
Meeting Info.: Annual Meeting of the American Society for Biochemistry and Molecular Biology San Francisco, California, USA May 21-25, 1995
ISSN: 0892-6638.
DOCUMENT TYPE: Conference
LANGUAGE: English

L30 ANSWER 13 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISIDUPLICATE 5
ACCESSION NUMBER: 95:759556 SCISEARCH
THE GENUINE ARTICLE: TB800
TITLE: PROTEIN-KINASES AND PHOSPHATASES THAT ACT ON HISTIDINE, LYSINE, OR ARGININE RESIDUES IN EUKARYOTIC PROTEINS - A POSSIBLE REGULATOR OF THE MITOGEN-ACTIVATED PROTEIN-KINASE CASCADE
AUTHOR: MATTHEWS H R (Reprint)
CORPORATE SOURCE: UNIV CALIF DAVIS, DEPT BIOL CHEM, DAVIS, CA, 95616 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: PHARMACOLOGY & THERAPEUTICS, (1995) Vol. 67, No. 3, pp. 323-350.
ISSN: 0163-7258.
DOCUMENT TYPE: General Review; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 154

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Phosphohistidine goes undetected in conventional studies of protein phosphorylation, although it may account for 6% of total protein phosphorylation in eukaryotes. Procedures for studying protein N- kinases are described. Genes whose products are putative protein histidine kinases occur in a yeast and a plant. In **rat** liver plasma membranes, activation of the small G-protein, Pas, causes protein **histidine** phosphorylation. Cellular **phosphatases** dephosphorylate phosphohistidine. One eukaryotic protein histidine kinase has been purified, and specific proteins phosphorylated on histidine have been observed. There is a protein arginine kinase in **mouse** and protein lysine kinases in **rat**. Protein phosphohistidine may regulate the mitogen-activated protein kinase cascade.

L30 ANSWER 14 OF 36 MEDLINE
ACCESSION NUMBER: 95391708 MEDLINE
DOCUMENT NUMBER: 95391708 PubMed ID: 7662712
TITLE: Removal of phosphate from phosphohistidine in proteins.
AUTHOR: Kim Y; Pesis K H; Matthews H R
CORPORATE SOURCE: Department of Biological Chemistry, University of California at Davis 95616, USA.
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA, (1995 Aug 31) 1268 (2) 221-8.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199510
ENTRY DATE: Entered STN: 19951020
Last Updated on STN: 19951020
Entered Medline: 19951010

AB Kinetic constants of KM = 0.8 microM, 3 microM and 1.6 microM, and kcat = 9 s-1, 7 s-1 or 9 s-1 were determined for histidine dephosphorylation by protein phosphatases 1, 2A and 2C respectively. IC50 values were determined for the inhibition of protein phosphatase 1 by inhibitor 1 (IC50 = 1 nM), inhibitor-2 (IC50 = 3 nM) and okadaic acid (IC50 = 30 nM) and for the inhibition of protein phosphatase 2A by okadaic acid (IC50 = 0.02 nM) and microcystin-LR (IC50 = 1 nM). Inhibitor-1 (Ki = 0.7 nM) and okadaic acid (Ki = 32 nM) are noncompetitive with protein phosphatase 1. Some of the IC50 values were low enough to violate the assumptions of the usual inhibition equations and a more general approach to the analysis of the data was used. On the basis of these kinetic parameters and the presence of phosphohistidine, the major cellular protein serine/threonine phosphatases are likely to act as protein **histidine phosphatases** in the cell.

L30 ANSWER 15 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 95:608914 SCISEARCH
THE GENUINE ARTICLE: RT442
TITLE: REMOVAL OF PHOSPHATE FROM PHOSPHOHISTIDINE IN PROTEINS
AUTHOR: KIM Y; PESIS K H; MATTHEWS H R (Reprint)
CORPORATE SOURCE: UNIV CALIF DAVIS, DEPT BIOL CHEM, DAVIS, CA, 95616 (Reprint); UNIV CALIF DAVIS, DEPT BIOL CHEM, DAVIS, CA, 95616; UNIV DUNDEE, DEPT BIOCHEM, MRC, PROT PHOSPHORYLAT UNIT, DUNDEE DD1 4HN, SCOTLAND
COUNTRY OF AUTHOR: USA; SCOTLAND
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR CELL RESEARCH, (31 AUG 1995) Vol. 1268, No. 2, pp. 221-228.
ISSN: 0167-4889.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 74

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Kinetic constants of K-M = 0.8 mu M, 3 mu M and 1.6 mu M, and k(cat) = 9 s(-1), 7 s(-1) or 9 s(-1) were determined for histidine dephosphorylation by protein phosphatases 1, 2A and 2C respectively. IC50 values were determined for the inhibition of protein phosphatase 1 by inhibitor 1 (IC50 = 1 nM), inhibitor-2 (IC50 = 3 nM) and okadaic acid (IC50 = 30 nM) and for the inhibition of protein phosphatase 2A by okadaic

acid (IC50 = 0.02 nM) and microcystin-LR (IC50 = 1 nM). Inhibitor-1 (K-i = 0.7 nM) and okadaic acid (K-i = 32 nM) are noncompetitive with protein phosphatase 1. Some of the IC50 values were low enough to violate the assumptions of the usual inhibition equations and a more general approach to the analysis of the data was used. On the basis of these kinetic parameters and the presence of phosphohistidine, the major cellular protein serine/threonine phosphatases are likely to act as protein **histidine phosphatases** in the cell.

L30 ANSWER 16 OF 36 MEDLINE DUPLICATE 6
ACCESSION NUMBER: 95269767 MEDLINE
DOCUMENT NUMBER: 95269767 PubMed ID: 7750542
TITLE: Protein **histidine phosphatase** activity in **rat** liver and spinach leaves.
AUTHOR: Matthews H R; MacKintosh C
CORPORATE SOURCE: Biochemistry Department, The University, Dundee, UK.
SOURCE: FEBS LETTERS, (1995 May 1) 364 (1) 51-4.
Journal code: 0155157. ISSN: 0014-5793.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199506
ENTRY DATE: Entered STN: 19950629
Last Updated on STN: 19950629
Entered Medline: 19950622

AB Whole cell extracts from **rat** liver or spinach leaves contain divalent ion-independent protein **histidine phosphatase** activity due to phosphatases of the PP1/PP2A family. In the **rat** liver extract, almost all the activity was found in the PP1, PP2A1 and PP2A2 peaks. In the spinach leaf extract, four phosphorylase phosphatase activity peaks were resolved--three containing PP1 and one containing PP2A--and all showed **histidine phosphatase** activity. Thus, protein **histidine phosphatase** activity is expressed in the cytosolic forms of protein phosphatases of the PP1/PP2A family in **mammalian** and plant cells.

L30 ANSWER 17 OF 36 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1994:528462 CAPLUS
DOCUMENT NUMBER: 121:128462
TITLE: Kinetic analysis and chemical modification of vitamin B6 phosphatase from **human** erythrocytes
AUTHOR(S): Gao, Guo Jian; Fonda, Margaret L.
CORPORATE SOURCE: Sch. Med., Univ. Louisville, Louisville, KY, 40292, USA
SOURCE: Journal of Biological Chemistry (1994), 269(10), 7163-8
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The specificity and active site properties of vitamin B6 phosphatase purified from **human** erythrocytes were studied by kinetic analyses with vitamin B6 compds. and derivs. and chem. modification with group-specific reagents. The kinetic consts. for pyridoxal phosphate (PLP), 4-pyridoxic acid phosphate, pyridoxine phosphate, and pyridoxamine phosphate were detd. from pH 5 to 9. The values of Vmax/Km and pKm were highest for PLP and 4-pyridoxic acid phosphate and lowest for pryidoxamine phosphate. Vmax/Km and pKm for the four substrates were max. between pH 6 and 8. Ionizable groups with pKa values about 6 and 8 affected substrate binding to the enzyme. Vmax values for all the substrates gradually decreased with increasing pH. The enzyme also catalyzed the dephosphorylation of 4'-secondary amine derivs. of vitamin B6-phosphate. The phosphatase had greatest catalytic efficiency with substrates that contained a neg. charged group on the 4'-position of the pyridine ring. It is concluded that there are one or two pos. charged groups at the active site of the enzyme that interact with the substrate's phosphate ester and 4'-substituent. The phosphatase was inactivated by phenylglyoxal, and PLP protected the enzyme against this inactivation. Phenylglyoxal did not modify Lys or Cys residues or an .alpha.-amino group since the enzyme's NH2 terminus is blocked, and it did not affect the quaternary structure of the phosphatase. The enzyme was inactivated by

the incorporation of 1 mol of phenylglyoxal/subunit. Diethylpyrocarbonate inactivated the enzyme by reacting with a group with a pKa of 6.7, and pyridoxine phosphate protected the enzyme against this inactivation. These data suggest that Arg and His residues are at or near the active site and may play roles in substrate binding and/or catalysis.

L30 ANSWER 18 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 94:480748 SCISEARCH
THE GENUINE ARTICLE: PA034
TITLE: PHOSPHORYLATED SYNTHETIC PEPTIDES AS TOOLS FOR STUDYING PROTEIN PHOSPHATASES
AUTHOR: PINNA L A (Reprint); DONELLADEANA A
CORPORATE SOURCE: UNIV PADUA, DEPT BIOL CHEM, VIA TRIESTE 75, I-35121 PADUA, ITALY (Reprint)
COUNTRY OF AUTHOR: ITALY
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR CELL RESEARCH, (21 JUL 1994) Vol. 1222, No. 3, pp. 415-431.
ISSN: 0167-4889.
DOCUMENT TYPE: General Review; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 98

L30 ANSWER 19 OF 36 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1994:697831 CAPLUS
DOCUMENT NUMBER: 121:297831
TITLE: Phosphatase activity of external membranes of primary olfactory receptors. 2. Effect of amino acids
AUTHOR(S): Poltorak, O. M.; Chukhrai, E. S.; Veselova, M. N.; Voznesenskaya, V. V.; Parfionova, V. N.
CORPORATE SOURCE: Mosk. Gos. Univ., Moscow, Russia
SOURCE: Vestnik Moskovskogo Universiteta, Seriya 2: Khimiya (1994), 35(4), 309-12
CODEN: VMUKA5; ISSN: 0579-9384
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The phosphatase activity of a prepn. of exterior membranes of primary olfactory receptors of **rats** differently responded to amino acids (glycine, histidine, tyrosine, and glutamic acid). The prepn. was effectively used as a biocatalyst for hydrolysis of n-nitrophenylphosphate (phosphatase activity) in a bicarbonate buffer system. Thus, all studied amino acids are bound by primary olfactory receptors changing their phosphatase activity. The method used is a convenient model for studying primary binding of odorant or other effector due to a high sensitivity of the external membrane of the olfactory lining.

L30 ANSWER 20 OF 36 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1994:150021 BIOSIS
DOCUMENT NUMBER: PREV199497163021
TITLE: Protein **histidine phosphatase** activity in **rat** liver and spinach leaf extracts.
AUTHOR(S): Matthews, Harry R.
CORPORATE SOURCE: Dep. Biol. Chem., Univ. Calif., Davis, CA 95616 USA
SOURCE: Journal of Cellular Biochemistry Supplement, (1994) Vol. 0, No. 18B, pp. 283.
Meeting Info.: Keystone Symposium on Transmembrane Signal Transduction: Structure, Mechanisms, Regulation of Evolution Keystone, Colorado, USA February 6-13, 1994
ISSN: 0733-1959.
DOCUMENT TYPE: Conference
LANGUAGE: English

L30 ANSWER 21 OF 36 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1995:51568 BIOSIS
DOCUMENT NUMBER: PREV199598065868
TITLE: Protein **histidine** kinases and **phosphatases** in **rat** liver.
AUTHOR(S): Motojima, K.
CORPORATE SOURCE: Dep. Biochemistry, Faculty Pharmaceutical Sciences, Toho Univ., Funabashi, Chiba 274 Japan
SOURCE: Molecular Biology of the Cell, (1994) Vol. 5, No. SUPPL.,

pp. 150A.
Meeting Info.: Thirty-fourth Annual Meeting of the American Society for Cell Biology San Francisco, California, USA December 10-14, 1994
ISSN: 1059-1524.
DOCUMENT TYPE: Conference
LANGUAGE: English

L30 ANSWER 22 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 94:669712 SCISEARCH
THE GENUINE ARTICLE: PM439
TITLE: HIGH-MOLECULAR-WEIGHT POLYPEPTIDE SUBSTRATES FOR PHOSPHOLYSINE PHOSPHATASES
AUTHOR: WONG C; WU W; OBENSHAIN S A; DIAH S K; FAIOLA B; KENNELLY P J (Reprint)
CORPORATE SOURCE: VIRGINIA POLYTECH INST & STATE UNIV, DEPT BIOCHEM & ANAEROB MICROBIOL, BLACKSBURG, VA, 24061 (Reprint); VIRGINIA POLYTECH INST & STATE UNIV, DEPT BIOCHEM & ANAEROB MICROBIOL, BLACKSBURG, VA, 24061
COUNTRY OF AUTHOR: USA
SOURCE: ANALYTICAL BIOCHEMISTRY, (OCT 1994) Vol. 222, No. 1, pp. 14-18.
ISSN: 0003-2697.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 19
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The detection and characterization of the phosphatases responsible for the dephosphorylation of N-phosphoryl groups, such as phospholysine, in proteins has been frustrated in large measure by a lack of suitable substrates for the assay of these enzymes. Herein we describe the preparation of phospholysine-containing amino acid homo- and heteropolymers by chemical means, and their use in a simple, nonradioactive assay for phospholysine phosphatase activity. (C) 1994 Academic Press, Inc.

L30 ANSWER 23 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 93:543777 SCISEARCH
THE GENUINE ARTICLE: LV659
TITLE: PROTEIN PHOSPHATASES-1, PHOSPHATASES-2A, AND PHOSPHATASES-2C ARE PROTEIN **HISTIDINE PHOSPHATASES**
AUTHOR: KIM Y H; HUANG J M; COHEN P; MATTHEWS H R (Reprint)
CORPORATE SOURCE: UNIV CALIF DAVIS, DEPT BIOL CHEM, DAVIS, CA, 95616; UNIV DUNDEE, DEPT BIOCHEM, DUNDEE DD1 4HN, SCOTLAND
COUNTRY OF AUTHOR: USA; SCOTLAND
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (05 SEP 1993) Vol. 268, No. 25, pp. 18513-18518.
ISSN: 0021-9258.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 30
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Eukaryotic cellular proteins contain phosphohistidine. To search for protein **histidine phosphatases**, protein histidine kinase from Saccharomyces cerevisiae was used to phosphorylate histone H4 on histidine at position 75 in the H4 amino acid sequence. Incubation of the phosphorylated histone H4 with either protein phosphatase 1, 2A, or 2C resulted in extensive removal of phosphate from the phosphorylated histone. Thus, protein phosphatases 1, 2A, and 2C are **histidine phosphatases** as well as serine/threonine phosphatases. Calcium/calmodulin-regulated protein phosphatase (protein phosphatase 2B) did not remove phosphate from phosphohistidine. The **histidine phosphatase** reaction was tested for a magnesium requirement and effects of inhibitor-1 and okadaic acid. In all cases, the protein phosphatases behaved as they do in their serine/threonine phosphatase activity. Extracts of the yeast, S. cerevisiae, contain protein **histidine phosphatase** activity. Quantitative measurement of phosphatase activity shows that the activity against phosphohistidine

is a major activity of protein phosphatases 1, 2A, and 2C.

L30 ANSWER 24 OF 36 MEDLINE DUPLICATE 7
ACCESSION NUMBER: 94079665 MEDLINE
DOCUMENT NUMBER: 94079665 PubMed ID: 8257415
TITLE: Phosphohistidine and phospholysine phosphatase activities in the **rat**: potential protein-lysine and protein-**histidine phosphatases**?.
AUTHOR: Wong C; Faiola B; Wu W; Kennelly P J
CORPORATE SOURCE: Department of Biochemistry and Anaerobic Microbiology, Virginia Polytechnic Institute and State University, Blacksburg 24061-0308.
CONTRACT NUMBER: GM45368 (NIGMS)
SOURCE: BIOCHEMICAL JOURNAL, (1993 Dec 1) 296 (Pt 2) 293-6. Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199401
ENTRY DATE: Entered STN: 19940203
Last Updated on STN: 19970203
Entered Medline: 19940110

AB We have detected phosphohistidine and phospholysine phosphatase activities in **rat** tissue extracts using partially phosphorylated, high-molecular-mass (> 10 kDa) polymers of histidine and lysine as substrates. Multiple phosphohistidine- and phospholysine-specific phosphatases were present in these extracts based on observed differences in heat stability, sensitivity to bivalent metal ions and thiol modifying reagents, and/or elution from DE-52 cellulose. The properties of these phosphohistidine and phospholysine phosphatases were distinct from those of the phosphomonoester-specific protein phosphatases or the N-P phosphohydrolases that act on the free phosphoamino acids phosphoarginine, 3-phosphohistidine or phospholysine.

L30 ANSWER 25 OF 36 MEDLINE DUPLICATE 8
ACCESSION NUMBER: 90056524 MEDLINE
DOCUMENT NUMBER: 90056524 PubMed ID: 2554911
TITLE: Inactivation of **rat** gastric mucosal **histidine** decarboxylase by **phosphatase**.
AUTHOR: Savany A; Cronenberger L
CORPORATE SOURCE: Laboratoire de Chimie Biologique, INSERM U. 205, Institut National des Sciences Appliquees, Villeurbanne, France.
SOURCE: BIOCHEMISTRY INTERNATIONAL, (1989 Aug) 19 (2) 429-38. Journal code: 8100311. ISSN: 0158-5231.
PUB. COUNTRY: Australia
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198912
ENTRY DATE: Entered STN: 19900328
Last Updated on STN: 19900328
Entered Medline: 19891208

AB Histidine decarboxylase of supernatants as well as of purified preparations from **rat** gastric mucosa is inactivated by a non-specific phosphatase in the absence of pyridoxal 5'-phosphate. The inactivation is a time and concentration-dependent process. Pyridoxal 5'-phosphate, but not histidine, protects the enzyme against phosphatase action. The inactivation is reversible, only pyridoxal 5'-phosphate reactivates the inactivated enzyme. Pyridoxamine 5'-phosphate is ineffective for histidine decarboxylase, but is converted into an active coenzyme only in gastric supernatant. Evidence for the occurrence of an active phosphatase in gastric tissue is also presented; its properties are those of an acid phosphatase and are similar to those of phosphatases hydrolyzing pyridoxal 5'-phosphate in other tissues. The data indicate that phosphatase promotes apoenzyme formation and may play a role in the regulation of histamine synthesis.

L30 ANSWER 26 OF 36 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 9
ACCESSION NUMBER: 1986:185302 CAPLUS
DOCUMENT NUMBER: 104:185302

TITLE: Effect of L-**histidine** on alkaline **phosphatase** activity in the liver and tumor cells of **mice** bearing Ehrlich ascites tumor
AUTHOR(S): Choy, Y. M.; Kwok, T. T.; Fung, K. P.
CORPORATE SOURCE: Dep. Biochem., Chinese Univ. Hong Kong, Shatin, Hong Kong
SOURCE: Nutrition Reports International (1986), 33(3), 459-63
CODEN: NURIBL; ISSN: 0029-6635
DOCUMENT TYPE: Journal
LANGUAGE: English
AB L-Histidine [71-00-1] exerts a substantial suppressive effect on the alk. phosphatase [9001-78-9] activity in the liver as well as tumor cells of **mice** bearing Ehrlich ascites tumor. The uptake of this amino acid increases with increased dosage of the amino acid. The suppressive effect might be due to the direct effect of L-histidine.

L30 ANSWER 27 OF 36 MEDLINE DUPLICATE 10
ACCESSION NUMBER: 86132051 MEDLINE
DOCUMENT NUMBER: 86132051 PubMed ID: 3912016
TITLE: [Cancer of the prostate: prostatic acid phosphatases. Biochemical properties and assay]. Cancer de la prostate: phosphatases acides prostatiques. Proprietes biochimiques et determination.
AUTHOR: Jardillier J C; Desoize B; Delvincourt C
SOURCE: BULLETIN DU CANCER, (1985) 72 (6) 519-26. Journal code: 0072416. ISSN: 0007-4551.
PUB. COUNTRY: France
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: French
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198603
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19980206
Entered Medline: 19860328
AB The first data on acidic phosphatase were published in the beginning of the 20th century. The applications to prostatic carcinoma were performed by Gutman in 1936. The enzyme is a glycoprotein which action mechanism is similar to a **histidine-phosphatase**. Acidic phosphatase has been found in numerous tissues and blood-stream cells. Its structure is dimeric and glycans average 10% of the M.W. The enzyme has been assayed in serum, using numerous substrates in the presence of specific inhibitors. The best results were obtained with thymolphthalein phosphate. Improvements were done by assays in bone marrow and by the introduction of immunological technics which lead to a better appreciation of tumoral invasion.

L30 ANSWER 28 OF 36 MEDLINE DUPLICATE 11
ACCESSION NUMBER: 84132563 MEDLINE
DOCUMENT NUMBER: 84132563 PubMed ID: 6321242
TITLE: Identification of histidyl and cysteinyl residues essential for catalysis by 5'-nucleotidase.
AUTHOR: Worku Y; Luzio J P; Newby A C
SOURCE: FEBS LETTERS, (1984 Feb 27) 167 (2) 235-40. Journal code: 0155157. ISSN: 0014-5793.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198404
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 20000303
Entered Medline: 19840411
AB Inactivation of both cytosolic 5'-nucleotidase and ecto-5'-nucleotidase by diethylpyrocarbonate indicated the presence of an essential histidyl residue which in the cytosolic enzyme was conclusively located at the active site. Inactivation by thiol reagents indicated the presence of an essential cysteinyl residue in both enzymes. The data suggest that both 5'-nucleotidases belong to a group of **histidine phosphatases** which also includes glucose-6-phosphatase and acid phosphatase. A working hypothesis for the catalytic mechanism of these enzymes is proposed.

L30 ANSWER 29 OF 36 MEDLINE DUPLICATE 12
ACCESSION NUMBER: 82229418 MEDLINE
DOCUMENT NUMBER: 82229418 PubMed ID: 6124201
TITLE: **Human** prostatic acid phosphatase: a **histidine phosphatase**.
AUTHOR: Van Etten R L
CONTRACT NUMBER: GM 27003 (NIGMS)
SOURCE: ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, (1982) 390 27-51.
Journal code: 7506858. ISSN: 0077-8923.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198208
ENTRY DATE: Entered STN: 19900317
Last Updated on STN: 19970203
Entered Medline: 19820807

L30 ANSWER 30 OF 36 SCISEARCH COPYRIGHT 2003 THOMSON ISIDUPLICATE 13
ACCESSION NUMBER: 82:309140 SCISEARCH
THE GENUINE ARTICLE: NV127
TITLE: **HUMAN** PROSTATIC-ACID PHOSPHATASE - A **HISTIDINE PHOSPHATASE**
AUTHOR: VANETTEN R L (Reprint)
CORPORATE SOURCE: PURDUE UNIV, DEPT CHEM, W LAFAYETTE, IN, 47907 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, (1982) Vol. 390, No. JUN, pp. 27-51.
DOCUMENT TYPE: Article; Journal
LANGUAGE: ENGLISH
REFERENCE COUNT: 63

L30 ANSWER 31 OF 36 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1980:617214 CAPLUS
DOCUMENT NUMBER: 93:217214
TITLE: Modification of **human** prostatic acid phosphatase by potassium ferrate
AUTHOR(S): Ostrowski, Wlodzimierz; Dziembor-Gryszkiewicz, Elzbieta
CORPORATE SOURCE: Inst. Med. Biochem., Nicolaus Copernicus Acad. Med., Krakow, 31-034, Pol.
SOURCE: International Journal of Biological Macromolecules (1980), 2(4), 241-4
CODEN: IJBMDR; ISSN: 0141-8130
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Prostatic acid phosphatase (EC 3.1.3.2) reacts with potassium ferrate (K_2FeO_4), a potent oxidizing agent and an analog of orthophosphate. Treatment of the enzyme with 10-6 M ferrate at pH 7.5 and 0 leads to the immediate loss of 95% of the activity. Molybdate, the competitive inhibitor of prostatic phosphatase, partially protects the enzyme from inactivation. Ferrate inactivation at pH 7.5 is accompanied by the modification of 2 histidine, 4 lysine, and 4 methionine residues. Histidine is protected by molybdate, whereas methionine is not and lysine is partly protected. Partial inactivation with ferrate leads to the retardation of the modified enzyme on Sephadex G-200 column, which is eluted in the position of the active monomeric unit.

L30 ANSWER 32 OF 36 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1980:633967 CAPLUS
DOCUMENT NUMBER: 93:233967
TITLE: Chemical aspects of the study of the active site of acid phosphatase from **rat** liver by spectroscopic methods
AUTHOR(S): Twardowski, Jacek; Proniewicz, Leonard Marian
CORPORATE SOURCE: Inst. Zool., Jagellonian Univ., Krakow, Pol.
SOURCE: Zeszyty Naukowe Uniwersytetu Jagiellonskiego, Prace Chemiczne (1980), 25, 93-101
CODEN: ZUJCAQ; ISSN: 0373-0166

DOCUMENT TYPE: Journal
LANGUAGE: Polish
AB Resonance Raman scattering was obsd. for a soln. of 4-nitrophenyl phosphate and **rat** liver acid phosphatase (I) in acetate buffer. This spectrum resulted from the metastable complex of the enzyme reaction product (p-nitrophenol) with the active site of I. The histidine imidazole of I apparently plays an important role in the hydrolytic reaction and the formation of the enzyme-substrate complex. The CO2H group of aspartate may also be involved. From changes in the Raman band intensities, I was concluded to have 2 active sites.

L30 ANSWER 33 OF 36 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1975:40132 CAPLUS
DOCUMENT NUMBER: 82:40132
TITLE: Acid phosphatase from **human** prostate. Chemical modification and activity of the enzyme
AUTHOR(S): Rybarska, Janina; Ostrowski, W.
CORPORATE SOURCE: Inst. Med. Biochem., Med.Sch., Krakow, Pol.
SOURCE: Acta Biochimica Polonica (1974), 21(3), 377-90
CODEN: ABPLAF; ISSN: 0001-527X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Iodine monochloride (ICl) at a 70-fold M excess and N-bromosuccinimide (NBS) at a 50-fold M excess completely inhibited the prostatic phosphatase activity; tetranitromethane (TNM) at a 300-fold molar excess inhibited the enzyme only .apprx.40%. ICI and TNM reacted mainly with tyrosine residues; NBS oxidized mainly tryptophan. The modified enzyme dissocd. into inactive subunits (52,000-55,000 daltons). Fluorescence intensity of the modified enzyme markedly decreased in the region characteristic for exposed tryptophan residues. The phosphatase was readily photoinactivated in the presence of Rose_Bengal. The rate of inactivation was 1st order, and it was much lower in the presence of substrates or competitive inhibitors. The photoinactivation rate was const. in the pH range 4.8-6.0 and increased rapidly at higher pH values, paralleling the theor. ionization curve of imidazole. Photoinactivation was accompanied by modification of .apprx.14 histidine residues but no dissocn. of the enzyme into subunits was obsd. Anal. of the results indicates that histidine residues probably take part in the active site of prostatic phosphatase, whereas tyrosine and tryptophan residues are not directly involved in the catalytic function of this enzyme.

L30 ANSWER 34 OF 36 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1970:527201 CAPLUS
DOCUMENT NUMBER: 73:127201
TITLE: Acid phosphatase from **rat** liver. Studies on the active center
AUTHOR(S): Igarashi, Mitsuo; Takahashi, Hiroshi; Tsuyama, Naoichi
CORPORATE SOURCE: Fac. Med., Univ. Tokyo, Tokyo, Japan
SOURCE: Biochimica et Biophysica Acta (1970), 220(1), 85-92
CODEN: BBACAQ; ISSN: 0006-3002
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Studies on cryst. acid phosphatase (EC 3.1.3.2) present further evidence for one active site by spectrophotometric expts., and the finding of 1 histidine residue per mol. by amino acid anal. The technique of dye-sensitized photooxidn. with methylene blue shows that the histidine residue is important for catalytic activity. Phosphohistidine-3-32P was isolated from alk. hydrolyzates of cryst. acid phosphatase that had been incubated with 32Pi.

L30 ANSWER 35 OF 36 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1966:431962 CAPLUS
DOCUMENT NUMBER: 65:31962
ORIGINAL REFERENCE NO.: 65:5957g-h,5958a-b
TITLE: Enzymic changes caused by tryptophan deficiency
AUTHOR(S): Quazza, G. F.; Gandullia, E.; Cordone, G.
CORPORATE SOURCE: Univ. Genoa
SOURCE: Pathologica (1965), 57(851-852), 165-74
CODEN: PATHAB; ISSN: 0031-2983
DOCUMENT TYPE: Journal
LANGUAGE: Italian

AB The effect of tryptophan (I) deficiency on the enzymic activity involved in glycogen and lipid metabolism was studied. I was chosen because of its relation to phenylketonuria and its role as a nicotinamide precursor. Twenty prepubertal **rats** were utilized, 10 of these were sacrificed after 8 days on a I-deficient diet, while the remaining 10 were kept as controls. Glycogen, I, tyrosine, **histidine**, SH, alk. **phosphatase**, succinic dehydrogenase, and NAD and NADP diaphorase were histol. detd. in liver, kidney, and muscle tissue, and a morphological study of the mitochondria was also made. A large decrease in body wt. was observed (av. wt. 74 g., controls 113 g.). Various organs also showed wt. changes (test and control wts. (mg.) are given): heart 299, 420; spleen 747, 305; liver 3900, 4485, and kidney 396, 592. A decrease in protein constituents was also noted, to which decreased protein synthesis can be attributed. The wt. loss of individual organs is probably due to a decrease in glycogen and lipid deposition as evidenced by diminished enzyme activities. The mitochondria were disorganized, and protein structure and enzymic activity were damaged even in tissues which were morphologically uninjured. Thus, it appears likely that I deficiency interferes with enzyme protein synthesis before altering the histol. structure.

L30 ANSWER 36 OF 36 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1948:32200 CAPLUS
DOCUMENT NUMBER: 42:32200
ORIGINAL REFERENCE NO.: 42:6863e-h
TITLE: Inhibitory effects of DL-alanine, L-glutamic acid, L-lysine, and L-histidine on the activity of intestinal, bone, and kidney phosphatases
AUTHOR(S): Bodansky, Oscar; Strachman, Norma
CORPORATE SOURCE: Cornell Univ. Med. Coll., New York, NY
SOURCE: Journal of Biological Chemistry (1948), 174, 465-76
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C.A. 41, 1721g. The phosphatase (I)-inhibiting action of these amino acids was investigated and evaluated in terms of the dissocn. consts. of assumed dissociable amino acid-I complexes (enzyme-inhibitor complex). L-Histidine in 0.006 M concn. produced a 50% inhibition of intestinal 1 activity, and a similar inhibition of bone and kidney I in 0.003 M. The inhibitory effects of L-glutamic acid on **rat** intestinal I, of L-lysine on **rat** bone and kidney I, and of L-histidine on intestinal, bone, and kidney I are of a higher order of magnitude than those of glycine or DL-alanine on these enzymes. Intestinal 1 activity was reduced to 25% of its original activity by 0.12 M DL-alanine. The inhibitory action of the amino acids could be largely reversed through dialysis, and was not due to the fortuitous presence of traces of heavy metal ions in the amino acids. Protein metabolism, either normal or deranged, may affect the enzyme activities of the organism in vivo.

=> s histidine phosphatase or histidine protein phosphatase
TOTAL FOR ALL FILES
L37 125 HISTIDINE PHOSPHATASE OR HISTIDINE PROTEIN PHOSPHATASE

=> s l37 not 2000-2003/py
TOTAL FOR ALL FILES
L44 88 L37 NOT 2000-2003/PY

=> dup rem l44
PROCESSING COMPLETED FOR L44
L45 29 DUP REM L44 (59 DUPLICATES REMOVED)

=> d ibib abs 1-29

L45 ANSWER 1 OF 29 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 1999:295312 SCISEARCH
THE GENUINE ARTICLE: 185HT
TITLE: Cyanobacterial PPP family protein phosphatases possess multifunctional capabilities and are resistant to microcystin-LR
AUTHOR: Shi L; Carmichael W W; Kennelly P J (Reprint)

CORPORATE SOURCE: VIRGINIA POLYTECH INST & STATE UNIV, DEPT BIOCHEM, BLACKSBURG, VA 24061 (Reprint); VIRGINIA POLYTECH INST & STATE UNIV, DEPT BIOCHEM, BLACKSBURG, VA 24061; WRIGHT STATE UNIV, DEPT BIOL SCI, DAYTON, OH 45435
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (9 APR 1999) Vol. 274, No. 15, pp. 10039-10046.
Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814.
ISSN: 0021-9258.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 58

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The structural gene for a putative PPP family protein-serine/threonine phosphatase from the microcystin-producing cyanobacterium Microcystis aeruginosa PCC 7820, ppl-cyanol, was cloned. The sequence of the predicted gene product, PP1-cyanol, was 98% identical to that of the predicted product of an open reading frame, ppl-cyano2 from a cyanobacterium that does not produce microcystins, M. aeruginosa UTEX 2063, By contrast, PP1-cyanol displayed less than 20% identity with other PPP family protein phosphatases from eukaryotic, archaeal, or other bacterial organisms. PP1-cyanol and PP1-cyano2 were expressed in Escherichia coil and purified to homogeneity. Both enzymes exhibited divalent metal dependent phosphohydrolase activity in vitro toward phosphoserine- and phosphotyrosine-containing proteins and 3-phosphohistidine- and phospholysine-containing amino acid homopolymers, This multifunctional potential also was apparent in samples of PP1-cyanol and PP1-cyano2 isolated from M. aeruginosa, Catalytic activity was insensitive to okadaic acid or the cyanobacterially produced cyclic heptapeptide, microcystin-LR, both potent inhibitors of mammalian PP1 and PP2A. PP1-cyanol and PP1-cyano2 displayed diadenosine tetraphosphatase activity in vitro. Diadenosine tetraphosphatases share conserved sequence features with PPP family protein phosphatases. The diadenosine tetraphosphatase activity of PP1-cyanol and PP1-cyano2 confirms that these enzymes share a common catalytic mechanism.

L45 ANSWER 2 OF 29 SCISEARCH COPYRIGHT 2003 THOMSON ISIDUPLICATE 1
ACCESSION NUMBER: 1999:201394 SCISEARCH
THE GENUINE ARTICLE: 173QK
TITLE: EnvZ-independent phosphotransfer signaling pathway of the OmpR-mediated osmoregulatory expression of OmpC and OmpF in Escherichia coli
AUTHOR: Matsubara M; Mizuno T (Reprint)
CORPORATE SOURCE: NAGOYA UNIV, SCH AGR, MOL MICROBIOL LAB, CHIKUSA KU, NAGOYA, AICHI 4648601, JAPAN (Reprint); NAGOYA UNIV, SCH AGR, MOL MICROBIOL LAB, CHIKUSA KU, NAGOYA, AICHI 4648601, JAPAN
COUNTRY OF AUTHOR: JAPAN
SOURCE: BIOSCIENCE BIOTECHNOLOGY AND BIOCHEMISTRY, (FEB 1999) Vol. 63, No. 2, pp. 408-414.
Publisher: JAPAN SOC BIOSCI BIOTECHN AGROCHEM, JAPAN ACAD SOC CTR BLDG, 2-4-6 YAYOI BUNKYO-KU, TOKYO 113, JAPAN.
ISSN: 0916-8451.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 36

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The Escherichia coil EnvZ-OmpR regulatory system is a paradigm of intracellular signal transduction mediated by the well-documented phosphotransfer mechanism, by which the expression of the major outer membrane proteins, OmpC and OmpF, is regulated in response to the medium osmolarity. Although it is clear that the EnvZ histidine(His)-kinase is the major player in the phosphorylation of OmpR, it has been assumed for some time that there may be an alternative phospho-donor(s) that can phosphorylate OmpR under certain in vitro and in vivo conditions. In this study, to address this long-standing issue, extensive genetic studies were done with certain mutant alleles, including Delta envZ, Delta(ackA-pta), and Delta sixA, as well as Delta ompR. Here, for the first time, genetic

evidence is provided that, in addition to EnvZ, acetyl phosphate and an as yet unidentified sensor His-kinase can serve as alternative in vivo phospho-douors for OmpR, even in the envZ(+) background. A model for the alternative phosphotransfer signaling pathway involved in the phosphorylation of OmpR is proposed.

L45 ANSWER 3 OF 29 MEDLINE DUPLICATE 2
ACCESSION NUMBER: 1999353966 MEDLINE
DOCUMENT NUMBER: 99353966 PubMed ID: 10423531
TITLE: Bovine liver phosphoamidase as a protein histidine/lysine phosphatase.
AUTHOR: Hiraishi H; Yokoi F; Kumon A
CORPORATE SOURCE: Department of Biochemistry, Saga Medical School, Saga, Saga, 849-8501, Japan.
SOURCE: JOURNAL OF BIOCHEMISTRY, (1999 Aug) 126 (2) 368-74.
Journal code: 0376600. ISSN: 0021-924X.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY DATE: Entered STN: 20000113
Last Updated on STN: 20000113
Entered Medline: 19991213

AB A 13-kDa phosphoamidase was isolated as a single band on SDS-PAGE from bovine liver. Its Stokes' radius, sedimentation coefficient, molecular mass, and optimal pH were estimated to be 1.6 nm, 1.8 s, 13 kDa, and 6.5, respectively. The enzyme released P(i) from 3-phosphohistidine, 6-phospholysine, and amidophosphate at rates of 0.9, 0.6, and 2.6 micromol/min/mg protein, respectively. However, it did not dephosphorylate phosphocreatine, N(omega)-phosphoarginine, imidodiphosphate, or O-phosphorylated compounds including inorganic pyrophosphate. It also dephosphorylated succinic thiokinase and nucleoside diphosphate kinase autophosphorylated at His residues, indicating that it works as a protein **histidine phosphatase**. A thiol reagent, 30 microM N-ethylmaleimide, depressed the activity by half, while a thiol compound, 2-mercaptoethanol, protected the enzyme from heat-inactivation. Five millimolar divalent cations, such as Mg2+ and Mn2+, and 5 mM EDTA, had no effect on the activity.

L45 ANSWER 4 OF 29 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 1999189241 MEDLINE
DOCUMENT NUMBER: 99189241 PubMed ID: 10087200
TITLE: Multiple inositol polyphosphate phosphatase: evolution as a distinct group within the **histidine phosphatase** family and chromosomal localization of the human and mouse genes to chromosomes 10q23 and 19.
AUTHOR: Chi H; Tiller G E; Dasouki M J; Romano P R; Wang J; O'keefe R J; Puzas J E; Rosier R N; Reynolds P R
CORPORATE SOURCE: Department of Orthopaedics, University of Rochester School of Medicine and Dentistry, Rochester, New York 14642, USA.
CONTRACT NUMBER: AR01925 (NIAMS)
AR38945 (NIAMS)
AR44091 (NIAMS)
+
SOURCE: GENOMICS, (1999 Mar 15) 56 (3) 324-36.
Journal code: 8800135. ISSN: 0888-7543.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF046908; GENBANK-AF046909; GENBANK-AF046910; GENBANK-AF046911; GENBANK-AF046912; GENBANK-AF046913; GENBANK-AF046914; GENBANK-AF046915
ENTRY MONTH: 199905
ENTRY DATE: Entered STN: 19990607
Last Updated on STN: 19990607
Entered Medline: 19990524

AB Multiple inositol polyphosphate phosphatase is the only enzyme known to hydrolyze the abundant metabolites inositol pentakisphosphate and inositol

hexakisphosphate. We have previously demonstrated that the chick homolog of multiple inositol polyphosphate phosphatase, designated HiPER1, has a role in growth plate chondrocyte differentiation. The relationship of these enzymes to intracellular signaling is obscure, and as part of our investigation we have examined the murine ((MMU)Minppl) and human ((HSA)MINPP1) homologs. Northern blot analysis demonstrated expression of ((MMU)Minppl in a variety of mouse tissues, comparable to the expression of other mammalian homologs, but less restricted than the expression of HiPER1 in chick. A purified (MMU)Minppl fusion protein cleaved phosphate from inositol (1,3,4,5)-tetrakisphosphate and para-nitrophenyl phosphate. When the presumptive active site histidine was altered to alanine by site-directed mutagenesis, enzyme activity was abolished, confirming the classification of (MMU)Minppl as a **histidine phosphatase** . The amino acid sequences of the murine and human MINPP proteins share >80% identity with the rat enzyme and >56% identity with HiPER1, with conservation of the C-terminal consensus sequence that retains proteins in the endoplasmic reticulum. The intron/exon structure of the mammalian (MMU)Minppl and (HSA)MINPP1 genes is also conserved compared to the chick HiPER1 gene. Sequence analysis of plant and fruit fly MINPP homologs supports the hypothesis that the MINPP enzymes constitute a distinct evolutionary group within the **histidine phosphatase** family. We have mapped (HSA)MINPP1 to human chromosome 10q23 by fluorescence in situ hybridization, YAC screening, and radiation hybrid mapping. This assignment places (HSA)MINPP1 in a region of chromosome 10 that is frequently mutated in human cancers and places (HSA)MINPP1 proximal to the tumor suppressor PTEN, which maps to 10q23.3. Using a radiation hybrid panel, we localized (MMU)Minppl to a region of mouse chromosome 19 that includes the murine homolog of Pten. The evolutionary conservation of this novel enzyme within the inositol polyphosphate pathway suggests a significant role for multiple inositol polyphosphate phosphatase throughout higher eukaryotes.

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L45 ANSWER 5 OF 29 MEDLINE DUPLICATE 4
ACCESSION NUMBER: 1999190857 MEDLINE
DOCUMENT NUMBER: 99190857 PubMed ID: 10089421
TITLE: Crystallographic characterization of a novel protein SixA which exhibits phospho-**histidine phosphatase** activity in the multistep His-Asp phosphorelay.
AUTHOR: Hamada K; Kato M; Mizuno T; Hakoshima T
CORPORATE SOURCE: Department of Molecular Biology, Nara Institute of Science and Technology (NAIST), 8916-5 Takayama, Ikoma, Nara 630-01, Japan.
SOURCE: ACTA CRYSTALLOGRAPHICA. SECTION D: BIOLOGICAL CRYSTALLOGRAPHY, (1999 Jan) 55 (Pt 1) 269-71. Journal code: 9305878. ISSN: 0907-4449.
PUB. COUNTRY: Denmark
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199905
ENTRY DATE: Entered STN: 19990517
Last Updated on STN: 19990517
Entered Medline: 19990503

AB SixA has been isolated from Escherichia coli as the first protein to exhibit phospho-**histidine phosphatase** activity. Recent biochemical studies have shown that SixA is involved in the signal transduction of the His-Asp phosphorelay through the dephosphorylation of the histidine-containing phosphotransfer (HPt) domain of the anaerobic sensor kinase ArcB. Crystals of SixA were obtained using a hanging-drop vapour-diffusion method with polyethylene glycol and calcium ions. Preliminary X-ray crystallographic analysis revealed that the crystals belonged to space group P212121 with unit-cell dimensions a = 39.26, b = 48.62 and c = 83.18 A, having one molecule in the crystallographic asymmetric unit. The intensity data were collected up to 1.5 A resolution using synchrotron radiation.

L45 ANSWER 6 OF 29 MEDLINE DUPLICATE 5
ACCESSION NUMBER: 1998129841 MEDLINE
DOCUMENT NUMBER: 98129841 PubMed ID: 9461622

TITLE: Molecular cloning and functional expression of mannitol-1-phosphatase from the apicomplexan parasite Eimeria tenella.

AUTHOR: Liberator P; Anderson J; Feiglin M; Sardana M; Griffin P; Schmatz D; Myers R W

CORPORATE SOURCE: Department of Parasite Biochemistry and Cell Biology, Merck Research Laboratories, Rahway, New Jersey 07065, USA.. paul_liberator@merck.com

SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1998 Feb 13) 273 (7) 4237-44.
Journal code: 2985121R. ISSN: 0021-9258.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF032462
ENTRY MONTH: 199803
ENTRY DATE: Entered STN: 19980407
Last Updated on STN: 19980407
Entered Medline: 19980323

AB A metabolic pathway responsible for the biosynthesis and utilization of mannitol is present in the seven species of Eimeria that infect chickens, but is not in the avian host. Mannitol-1-phosphatase (M1Pase), a key enzyme for mannitol biosynthesis, is a highly substrate-specific phosphatase and, accordingly, represents an attractive chemotherapeutic target. Amino acid sequence of tryptic peptides obtained from biochemically purified Eimeria tenella M1Pase was used to synthesize degenerate oligonucleotide hybridization probes. Using these reagents, a partial genomic clone and full-length cDNA clones have been isolated and characterized. The deduced amino acid sequence of E. tenella M1Pase shows limited overall homology to members of the phosphohistidine family of phosphatases. This limited homology to other **histidine phosphatases** does, however, include several conserved residues that have been shown to be essential for their catalytic activity. Kinetic parameters of recombinant M1Pase expressed in bacteria are essentially identical to those of the biochemically purified preparation from E. tenella. Moreover, recombinant M1Pase is subject to active site-directed, hydroxylamine-reversible inhibition by the histidine-selective acylating reagent diethyl pyrocarbonate. These results indicate the presence of an essential histidine residue(s) at the M1Pase active site, as predicted for a **histidine phosphatase**.

L45 ANSWER 7 OF 29 MEDLINE DUPLICATE 6

ACCESSION NUMBER: 1998139568 MEDLINE
DOCUMENT NUMBER: 98139568 PubMed ID: 9472008

TITLE: HiPER1, a phosphatase of the endoplasmic reticulum with a role in chondrocyte maturation.

AUTHOR: Romano P R; Wang J; O'Keefe R J; Puzas J E; Rosier R N; Reynolds P R

CORPORATE SOURCE: Department of Orthopaedics, University of Rochester, School of Medicine and Dentistry, Rochester, NY 14642, USA.

CONTRACT NUMBER: AR38945 (NIAMS)
AR44091 (NIAMS)
T32 DE07061 (NIDCR)

SOURCE: JOURNAL OF CELL SCIENCE, (1998 Mar) 111 (Pt 6) 803-13.
Journal code: 0052457. ISSN: 0021-9533.

PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U59421
ENTRY MONTH: 199807
ENTRY DATE: Entered STN: 19980713
Last Updated on STN: 20000303
Entered Medline: 19980701

AB We have previously identified and partially cloned Band 17, a gene expressed in growth plate chondrocytes transiting from proliferation to hypertrophy. We now rename this gene HiPER1, **Histidine Phosphatase** of the Endoplasmic Reticulum-1, based on the results reported here. HiPER1 encodes two proteins of 318 (HiPER1(318)) and 449

(HiPER1(449)) amino acids, which are 20-21% identical to a group of yeast acid phosphatases that are in the **histidine phosphatase** family. HiPER1(449) is significantly more abundant than HiPER1(318), correlating with the abundance of the alternatively spliced messages encoding HiPER449 and HiPER318. Anti-HiPER1 antibodies detect two proteins of 53 and 55 kDa in growth plate chondrocytes that are absent in articular chondrocytes. We confirm that the 53 and 55 kDa proteins are HiPER1(449) by heterologous expression of the HiPER1(449) coding sequence in chick embryo fibroblasts. The 53 and 55 kDa proteins are glycosylated forms of HiPER1(449), as N-glycosidase F digestion reduces these proteins to 48 kDa, the predicted size of HiPER1(449) without the N-terminal signal sequence. Immunocytochemistry demonstrates that HiPER1(449) is found in chondrocytes maturing from proliferation to hypertrophy, but is not detectable in resting zone, deep hypertrophic zone or articular chondrocytes, a distribution that is consistent with the message distribution. HiPER1(449) was predicted to localize to the lumen of endoplasmic reticulum by an N-terminal signal sequence and by the C-terminal sequence Ala-Asp-Glu-Leu, which closely matches the consensus signal for ER retention, Lys-Asp-Glu-Leu. We confirm this prediction by demonstrating colocalization of HiPER1(449) with the ER protein HSP47 using dual-label immunofluorescence. PTHrP, a peptide that prevents hypertrophy in chondrocytes, suppressed HiPER1 and HiPER1(449) expression in vitro, an observation that further supports a role for HiPER1 in chondrocyte maturation. The yeast phosphatase homology, localization to the endoplasmic reticulum and pattern of expression suggest that HiPER1 represents a previously unrecognized intracellular pathway, involved in differentiation of chondrocytes.

L45 ANSWER 8 OF 29 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1997:134498 BIOSIS
DOCUMENT NUMBER: PREV199799433701
TITLE: Protein phosphatases.
AUTHOR(S): Van Hoff C., J. Goris; Merlevede, W.
CORPORATE SOURCE: Katholieke Univ. Leuven, Fac. Geneeskunde, Afdeling Biochem., Herestr. 6, B-6000 Leuven Belgium
SOURCE: Marks, F. [Editor]. (1996) pp. 329-366. Protein phosphorylation.
Publisher: VCH Verlagsgesellschaft mbH Postfach 10 11 61, Boschstrasse 12, D-6940 Weinheim, Germany.
ISBN: 3-527-29241-1.
DOCUMENT TYPE: Book
LANGUAGE: English

L45 ANSWER 9 OF 29 MEDLINE DUPLICATE 7
ACCESSION NUMBER: 96214507 MEDLINE
DOCUMENT NUMBER: 96214507 PubMed ID: 8634242
TITLE: Crystal structure of the rat liver fructose-2,6-bisphosphatase based on selenomethionine multiwavelength anomalous dispersion phases.
AUTHOR: Lee Y H; Ogata C; Pflugrath J W; Levitt D G; Sarma R; Banaszak L J; Pilkis S J
CORPORATE SOURCE: Department of Biochemistry, University of Minnesota, Minneapolis 55455, USA.
CONTRACT NUMBER: R37-DK38354 (NIDDK)
SOURCE: BIOCHEMISTRY, (1996 May 14) 35 (19) 6010-9.
Journal code: 0370623. ISSN: 0006-2960.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199607
ENTRY DATE: Entered STN: 19960719
Last Updated on STN: 19960719
Entered Medline: 19960708

AB The crystal structure of the recombinant fructose-2,6-bisphosphatase domain, which covers the residues between 251 and 440 of the rat liver bifunctional enzyme, 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase, was determined by multiwavelength anomalous dispersion phasing and refined at 2.5 A resolution. The selenomethionine-substituted protein was induced in the methionine auxotroph, Escherichia coli DL41DE3, purified, and crystallized in a manner similar to that of the native protein. Phase

information was calculated using the multiwavelength anomalous dispersion data collected at the X-ray wavelengths near the absorption edge of the K-shell alpha electrons of selenium. The fructose-2,6-bisphosphatase domain has a core alpha/beta structure which consists of six stacked beta-strands, four parallel and two antiparallel. The core beta-sheet is surrounded by nine alpha-helices. The catalytic site, as defined by a bound phosphate ion, is positioned near the C-terminal end of the beta-sheet and close to the N-terminal end of an alpha-helix. The active site pocket is funnel-shaped. The narrow opening of the funnel is wide enough for a water molecule to pass. The key catalytic residues, including His7, His141, and Glu76, are near each other at the active site and probably function as general acids and/or bases during a catalytic cycle. The inorganic phosphate molecule is bound to an anion trap formed by Arg6, His7, Arg56, and His141. The core structure of the Fru-2,6-P2ase is similar to that of the yeast phosphoglycerate mutase and the rat prostatic acid phosphatase. However, the structure of one of the loops near the active site is completely different from the other family members, perhaps reflecting functional differences and the nanomolar range affinity of Fru-2,6-P2ase for its substrate. The imidazole rings of the two key catalytic residues, His7 and His141, are not parallel as in the yeast phosphoglycerate mutase. The crystal structure is used to interpret the existing chemical data already available for the bisphosphatase domain. In addition, the crystal structure is compared with two other proteins that belong to the **histidine phosphatase** family.

L45 ANSWER 10 OF 29 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1997:545583 CAPLUS
DOCUMENT NUMBER: 127:216774
TITLE: Protein phosphatases
AUTHOR(S): Van Hoof, C.; Goris, J.; Merlevede, W.
CORPORATE SOURCE: Faculteit der Geneeskunde, Katholieke Universiteit Leuven, Afdeling Biochemie, Louvain, B-6000, Belg.
SOURCE: Protein Phosphorylation (1996), 329-366. Editor(s): Marks, Friedrich. VCH: Weinheim, Germany. CODEN: 64VDAE
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review, with 266 refs., on protein serine phosphatases,protein tyrosine phosphatases, dual specificity protein phosphatases, alk. and acid phosphatases, and protein **histidine phosphatases**.

L45 ANSWER 11 OF 29 MEDLINE DUPLICATE 8
ACCESSION NUMBER: 97018971 MEDLINE
DOCUMENT NUMBER: 97018971 PubMed ID: 8865587
TITLE: Phytase.
AUTHOR: Wodzinski R J; Ullah A H
CORPORATE SOURCE: Department of Molecular Biology and Microbiology, University of Central Florida, Orlando 32816, USA.
SOURCE: ADVANCES IN APPLIED MICROBIOLOGY, (1996) 42 263-302. Journal code: 0370413. ISSN: 0065-2164.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-L02421; GENBANK-M94550
ENTRY MONTH: 199611
ENTRY DATE: Entered STN: 19961219
Last Updated on STN: 19961219
Entered Medline: 19961114
AB Of all the sources of phytase that have been studied (plant, animal, and microorganisms), the highest yields are produced by a wild-type strain A. niger NRRL 3135 (12.7 mg P/hr/ml = 6.8 microns P/ml/min = 113.9 nKat/ml) in a mineral salt medium in which total phosphate (4 mg %) is limiting for growth and cornstarch and glucose are the carbon sources. Synthesis of the enzyme is repressed by phosphate in the wild-type strain. Aspergillus niger NRRL 3135 produces two phytases one with pH optima at 2.5 and 5.5 (phyA) and one with an optimum at pH 2.0 (phyB). It also produces a pH 6.0 optimum phosphatase that has no phytase activity. These three glycoproteins have been purified to homogeneity, characterized, sequenced, and cloned. The sequences have been compared to each other, other

phytases, and to known phosphatases. Their homology has been determined. The active sites of phytases show remarkable homology to the active site residues of the members of a particular class of acid phosphatase (**histidine phosphatase**). The most conserved sequence is RHGXRXP. Phytase has been covalently immobilized on Fractogel TSK HW-75 F and glutaraldehyde-activated silicate. It has been immobilized on agarose. Losses of activity have been noted on immobilization but these may be minimized by future research. It should be possible to commercially produce and recover penta-, tetra-, tri-, di-, and monoinositol phosphates using immobilized phytase if markets develop for those products. Phytase (phyA) from A. niger NRRL 3135 has been cloned into an A. niger glucoamylase producing strain CBS 513.88 using a construct that has a glucoamylae promoter and an A. niger NRRL 3135 leader sequence, and that is devoid of phosphate repression. The yield of the secreted enzyme was increased 52-fold above that of wild-type A. niger NRRL 3135. The bioengineered organism produces 270 microns P/ml/min (4500 nKat/ml) which is approximately 7.9 g/liter in the medium. The yield of the secreted enzyme was increased 1440-fold above that of wild type CBS 513.88. Commercial preparations of the cloned enzyme are available. Phytase (phyA) has been cloned into tobacco and canola. The enzyme is localized in the seed and expressed at high levels. Feeding of the seed to animals has made the phytin-P in the commercial diets available to the animals. The efficacy of feeding phytase to monogastric animals (poultry and swine) has been established. The amount of enzyme that is necessary to be added to commercial diets has been titred for broilers, layers, turkeys, ducks, and swine. The units of enzyme required are related to the phytin-P content in the diet. The use of the enzyme as a feed additive has been cleared in 22 countries. If phytase were used in the diets of all of the monogastric animals reared in the U.S., it would release phosphorus that has a value of $1.68 x 10(8) per year. The FDA has approved the enzyme preparation as GRAS. The effect of feeding phytase to animals enables assimilation of the P found in feed ingredients and diminishes the amount of phosphate in the manure and subsequently entering the environment. The effect of feeding phytase to animals on pollution has been quantitatively determined. If phytase were used in the diets of all of the monogastric animals reared in the United States, it would preclude 8.23 x 10(7) kg P from entering the environment.

L45 ANSWER 12 OF 29 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 95:326100 SCISEARCH
THE GENUINE ARTICLE: QV274
TITLE: PROTEIN **HISTIDINE PHOSPHATASE**-ACTIVITY OF PROTEIN PHOSPHATASE-1, PHOSPHATASE-2A AND PHOSPHATASE-2C AND INHIBITION BY OKADAIC ACID
AUTHOR: MATTHEWS H R (Reprint); PESIS K; KIM Y K
CORPORATE SOURCE: UNIV CALIF DAVIS, DAVIS, CA, 95616
COUNTRY OF AUTHOR: USA
SOURCE: FASEB JOURNAL, (24 APR 1995) Vol. 9, No. 6, pp. A1347. ISSN: 0892-6638.
DOCUMENT TYPE: Conference; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: No References

L45 ANSWER 13 OF 29 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1995:286496 BIOSIS
DOCUMENT NUMBER: PREV199598300796
TITLE: Protein **histidine phosphatase** activity of protein phosphatases 1, 2A and 2C and inhibition by okadaic acid.
AUTHOR(S): Matthews, Harry R.; Pesis, Karen; Kim, Younhee
CORPORATE SOURCE: Univ. California Davis, Davis, CA 95616 USA
SOURCE: FASEB Journal, (1995) Vol. 9, No. 6, pp. A1347. Meeting Info.: Annual Meeting of the American Society for Biochemistry and Molecular Biology San Francisco, California, USA May 21-25, 1995 ISSN: 0892-6638.
DOCUMENT TYPE: Conference
LANGUAGE: English

L45 ANSWER 14 OF 29 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1995:514872 CAPLUS
DOCUMENT NUMBER: 123:28233
TITLE: Physiological functions of protein phosphatase2C
AUTHOR(S): Kobayashi, Takayasu; Kato, Shunsuke; Tamura, Shinri
CORPORATE SOURCE: Inst. Dev., Aging Cancer, Tohoku Univ., Sendai, 980-77, Japan
SOURCE: Jikken Igaku (1995), 13(6), 633-8
CODEN: JIIGEF; ISSN: 0288-5514
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review with 23 refs., on the structure of phosphoprotein phosphatase 2C (PP2C), regulation of enzyme activity by PP2C, function of PP2C as a **histidine phosphatase**, the relation between heat response and PP2C, and PP2C in plant cells.

L45 ANSWER 15 OF 29 MEDLINE DUPLICATE 9
ACCESSION NUMBER: 95391708 MEDLINE
DOCUMENT NUMBER: 95391708 PubMed ID: 7662712
TITLE: Removal of phosphate from phosphohistidine in proteins.
AUTHOR: Kim Y; Pesis K H; Matthews H R
CORPORATE SOURCE: Department of Biological Chemistry, University of California at Davis 95616, USA.
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA, (1995 Aug 31) 1268 (2) 221-8.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199510
ENTRY DATE: Entered STN: 19951020
Last Updated on STN: 19951020
Entered Medline: 19951010

AB Kinetic constants of KM = 0.8 microM, 3 microM and 1.6 microM, and kcat = 9 s-1, 7 s-1 or 9 s-1 were determined for histidine dephosphorylation by protein phosphatases 1, 2A and 2C respectively. IC50 values were determined for the inhibition of protein phosphatase 1 by inhibitor 1 (IC50 = 1 nM), inhibitor-2 (IC50 = 3 nM) and okadaic acid (IC50 = 30 nM) and for the inhibition of protein phosphatase 2A by okadaic acid (IC50 = 0.02 nM) and microcystin-LR (IC50 = 1 nM). Inhibitor-1 (Ki = 0.7 nM) and okadaic acid (Ki = 32 nM) are noncompetitive with protein phosphatase 1. Some of the IC50 values were low enough to violate the assumptions of the usual inhibition equations and a more general approach to the analysis of the data was used. On the basis of these kinetic parameters and the presence of phosphohistidine, the major cellular protein serine/threonine phosphatases are likely to act as protein **histidine phosphatases** in the cell.

L45 ANSWER 16 OF 29 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 95:608914 SCISEARCH
THE GENUINE ARTICLE: RT442
TITLE: REMOVAL OF PHOSPHATE FROM PHOSPHOHISTIDINE IN PROTEINS
AUTHOR: KIM Y; PESIS K H; MATTHEWS H R (Reprint)
CORPORATE SOURCE: UNIV CALIF DAVIS, DEPT BIOL CHEM, DAVIS, CA, 95616 (Reprint); UNIV CALIF DAVIS, DEPT BIOL CHEM, DAVIS, CA, 95616; UNIV DUNDEE, DEPT BIOCHEM, MRC, PROT PHOSPHORYLAT UNIT, DUNDEE DD1 4HN, SCOTLAND
COUNTRY OF AUTHOR: USA; SCOTLAND
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR CELL RESEARCH, (31 AUG 1995) Vol. 1268, No. 2, pp. 221-228.
ISSN: 0167-4889.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 74
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Kinetic constants of K-M = 0.8 mu M, 3 mu M and 1.6 mu M, and k(cat) = 9 s(-1), 7 s(-1) or 9 s(-1) were determined for histidine dephosphorylation by protein phosphatases 1, 2A and 2C respectively. IC50 values were determined for the inhibition of protein phosphatase 1 by inhibitor 1 (IC50 = 1 nM), inhibitor-2 (IC50 = 3 nM) and okadaic acid

(IC50 = 30 nM) and for the inhibition of protein phosphatase 2A by okadaic acid (IC50 = 0.02 nM) and microcystin-LR (IC50 = 1 nM). Inhibitor-1 (K-i = 0.7 nM) and okadaic acid (K-i = 32 nM) are noncompetitive with protein phosphatase 1. Some of the IC50 values were low enough to violate the assumptions of the usual inhibition equations and a more general approach to the analysis of the data was used. On the basis of these kinetic parameters and the presence of phosphohistidine, the major cellular protein serine/threonine phosphatases are likely to act as protein **histidine phosphatases** in the cell.

L45 ANSWER 17 OF 29 MEDLINE DUPLICATE 10
ACCESSION NUMBER: 95269767 MEDLINE
DOCUMENT NUMBER: 95269767 PubMed ID: 7750542
TITLE: Protein **histidine phosphatase** activity in rat liver and spinach leaves.
AUTHOR: Matthews H R; MacKintosh C
CORPORATE SOURCE: Biochemistry Department, The University, Dundee, UK.
SOURCE: FEBS LETTERS, (1995 May 1) 364 (1) 51-4.
Journal code: 0155157. ISSN: 0014-5793.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199506
ENTRY DATE: Entered STN: 19950629
Last Updated on STN: 19950629
Entered Medline: 19950622

AB Whole cell extracts from rat liver or spinach leaves contain divalent ion-independent protein **histidine phosphatase** activity due to phosphatases of the PP1/PP2A family. In the rat liver extract, almost all the activity was found in the PP1, PP2A1 and PP2A2 peaks. In the spinach leaf extract, four phosphorylase phosphatase activity peaks were resolved--three containing PP1 and one containing PP2A--and all showed **histidine phosphatase** activity. Thus, protein **histidine phosphatase** activity is expressed in the cytosolic forms of protein phosphatases of the PP1/PP2A family in mammalian and plant cells.

L45 ANSWER 18 OF 29 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 94:480748 SCISEARCH
THE GENUINE ARTICLE: PA034
TITLE: PHOSPHORYLATED SYNTHETIC PEPTIDES AS TOOLS FOR STUDYING PROTEIN PHOSPHATASES
AUTHOR: PINNA L A (Reprint); DONELLADEANA A
CORPORATE SOURCE: UNIV PADUA, DEPT BIOL CHEM, VIA TRIESTE 75, I-35121 PADUA, ITALY (Reprint)
COUNTRY OF AUTHOR: ITALY
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR CELL RESEARCH, (21 JUL 1994) Vol. 1222, No. 3, pp. 415-431.
ISSN: 0167-4889.
DOCUMENT TYPE: General Review; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 98

L45 ANSWER 19 OF 29 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1994:150021 BIOSIS
DOCUMENT NUMBER: PREV199497163021
TITLE: Protein **histidine phosphatase** activity in rat liver and spinach leaf extracts.
AUTHOR(S): Matthews, Harry R.
CORPORATE SOURCE: Dep. Biol. Chem., Univ. Calif., Davis, CA 95616 USA
SOURCE: Journal of Cellular Biochemistry Supplement, (1994) Vol. 0, No. 18B, pp. 283.
Meeting Info.: Keystone Symposium on Transmembrane Signal Transduction: Structure, Mechanisms, Regulation of Evolution Keystone, Colorado, USA February 6-13, 1994
ISSN: 0733-1959.
DOCUMENT TYPE: Conference
LANGUAGE: English

L45 ANSWER 20 OF 29 MEDLINE DUPLICATE 11
ACCESSION NUMBER: 95032134 MEDLINE
DOCUMENT NUMBER: 95032134 PubMed ID: 7945393
TITLE: An acid phosphatase from Aspergillus ficuum has homology to Penicillium chrysogenum PhoA.
AUTHOR: Ehrlich K C; Montalbano B G; Mullaney E J; Dischinger H C Jr; Ullah A H
CORPORATE SOURCE: Southern Regional Research Center, USDA, New Orleans, LA 70179.
SOURCE: BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (1994 Oct 14) 204 (1) 63-8.
Journal code: 0372516. ISSN: 0006-291X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-L20566
ENTRY MONTH: 199411
ENTRY DATE: Entered STN: 19941222
Last Updated on STN: 19941222
Entered Medline: 19941123

AB Three secreted acid phosphatases had previously been characterized from Aspergillus ficuum grown under conditions of limited phosphate. One of these could not be readily separated from AFPhyB, a pH 2.5 optimum acid phosphatase with phytase activity. From extensive protein sequence analysis and subsequent cloning of the gene, we have shown that the AFPhyB protein fraction contains a fourth secreted acid phosphatase (AFPhoA) that has 64% homology to a phosphate-repressible acid phosphatase from Penicillium chrysogenum. Garnier plot analysis revealed that the putative phosphate catalytic domain of AFPhoA at His215Asp216 is similar to those of other acid phosphatases, but that AFPhoA lacks the phosphate-binding motif RHGXRXP of known **histidine phosphatases**.

L45 ANSWER 21 OF 29 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 94:669712 SCISEARCH
THE GENUINE ARTICLE: PM439
TITLE: HIGH-MOLECULAR-WEIGHT POLYPEPTIDE SUBSTRATES FOR PHOSPHOLYSINE PHOSPHATASES
AUTHOR: WONG C; WU W; OBENSHAIN S A; DIAH S K; FAIOLA B; KENNELLY P J (Reprint)
CORPORATE SOURCE: VIRGINIA POLYTECH INST & STATE UNIV, DEPT BIOCHEM & ANAEROB MICROBIOL, BLACKSBURG, VA, 24061 (Reprint); VIRGINIA POLYTECH INST & STATE UNIV, DEPT BIOCHEM & ANAEROB MICROBIOL, BLACKSBURG, VA, 24061
COUNTRY OF AUTHOR: USA
SOURCE: ANALYTICAL BIOCHEMISTRY, (OCT 1994) Vol. 222, No. 1, pp. 14-18.
ISSN: 0003-2697.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 19
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The detection and characterization of the phosphatases responsible for the dephosphorylation of N-phosphoryl groups, such as phospholysine, in proteins has been frustrated in large measure by a lack of suitable substrates for the assay of these enzymes. Herein we describe the preparation of phospholysine-containing amino acid homo- and heteropolymers by chemical means, and their use in a simple, nonradioactive assay for phospholysine phosphatase activity. (C) 1994 Academic Press, Inc.

L45 ANSWER 22 OF 29 MEDLINE DUPLICATE 12
ACCESSION NUMBER: 93366752 MEDLINE
DOCUMENT NUMBER: 93366752 PubMed ID: 8395506
TITLE: Protein phosphatases 1, 2A, and 2C are protein **histidine phosphatases**.
AUTHOR: Kim Y; Huang J; Cohen P; Matthews H R
CORPORATE SOURCE: Department of Biological Chemistry, University of California, Davis 95616.
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1993 Sep 5) 268 (25)

18513-8.
Journal code: 2985121R. ISSN: 0021-9258.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199309
ENTRY DATE: Entered STN: 19931015
Last Updated on STN: 19970203
Entered Medline: 19930930

AB Eukaryotic cellular proteins contain phosphohistidine. To search for protein **histidine phosphatases**, protein histidine kinase from Saccharomyces cerevisiae was used to phosphorylate histone H4 on histidine at position 75 in the H4 amino acid sequence. Incubation of the phosphorylated histone H4 with either protein phosphatase 1, 2A, or 2C resulted in extensive removal of phosphate from the phosphorylated histone. Thus, protein phosphatases 1, 2A, and 2C are **histidine phosphatases** as well as serine/threonine phosphatases. Calcium/calmodulin-regulated protein phosphatase (protein phosphatase 2B) did not remove phosphate from phosphohistidine. The **histidine phosphatase** reaction was tested for a magnesium requirement and effects of inhibitor-1 and okadaic acid. In all cases, the protein phosphatases behaved as they do in their serine/threonine phosphatase activity. Extracts of the yeast, S. cerevisiae, contain protein **histidine phosphatase** activity. Quantitative measurement of phosphatase activity shows that the activity against phosphohistidine is a major activity of protein phosphatases 1, 2A, and 2C.

L45 ANSWER 23 OF 29 MEDLINE DUPLICATE 13
ACCESSION NUMBER: 94079665 MEDLINE
DOCUMENT NUMBER: 94079665 PubMed ID: 8257415
TITLE: Phosphohistidine and phospholysine phosphatase activities in the rat: potential protein-lysine and protein-**histidine phosphatases**?.
AUTHOR: Wong C; Faiola B; Wu W; Kennelly P J
CORPORATE SOURCE: Department of Biochemistry and Anaerobic Microbiology, Virginia Polytechnic Institute and State University, Blacksburg 24061-0308.
CONTRACT NUMBER: GM45368 (NIGMS)
SOURCE: BIOCHEMICAL JOURNAL, (1993 Dec 1) 296 (Pt 2) 293-6.
Journal code: 2984726R. ISSN: 0264-6021.

PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199401
ENTRY DATE: Entered STN: 19940203
Last Updated on STN: 19970203
Entered Medline: 19940110

AB We have detected phosphohistidine and phospholysine phosphatase activities in rat tissue extracts using partially phosphorylated, high-molecular-mass (> 10 kDa) polymers of histidine and lysine as substrates. Multiple phosphohistidine- and phospholysine-specific phosphatases were present in these extracts based on observed differences in heat stability, sensitivity to bivalent metal ions and thiol modifying reagents, and/or elution from DE-52 cellulose. The properties of these phosphohistidine and phospholysine phosphatases were distinct from those of the phosphomonoester-specific protein phosphatases or the N-P phosphohydrolases that act on the free phosphoamino acids phosphoarginine, 3-phosphohistidine or phospholysine.

L45 ANSWER 24 OF 29 MEDLINE DUPLICATE 14
ACCESSION NUMBER: 92332450 MEDLINE
DOCUMENT NUMBER: 92332450 PubMed ID: 1321122
TITLE: Phosphorylation site of NtrC, a protein phosphatase whose covalent intermediate activates transcription.
AUTHOR: Sanders D A; Gillece-Castro B L; Burlingame A L; Koshland D E Jr
CORPORATE SOURCE: Department of Molecular and Cell Biology, University of California, Berkeley 94720.

CONTRACT NUMBER: GM07175 (NIGMS)
RR01614 (NCRR)
SOURCE: JOURNAL OF BACTERIOLOGY, (1992 Aug) 174 (15) 5117-22.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199208
ENTRY DATE: Entered STN: 19920904
Last Updated on STN: 20000303
Entered Medline: 19920814

AB The NtrC transcription factor is a member of a family of homologous prokaryotic regulatory proteins that participate in the transduction of extracellular and nutritional signals. It has been demonstrated that the phosphate group from a histidine residue of the phosphorylated NtrB protein autokinase is transferred to the NtrC protein. Phosphorylation of the NtrC protein is transient and activates its transcriptional enhancement activity. We have investigated the site of phosphorylation of the Salmonella typhimurium NtrC protein and find that it is an aspartate residue (Asp-54) that is found within a sequence conserved in all of the members of the family of regulatory proteins. We propose that this phosphorylation is an NtrC protein **histidine phosphatase** catalytic intermediate. This conclusion suggests that the NtrC family should be viewed not as kinase substrates but as enzymes that can catalyze the hydrolysis of their activated forms in a concentration-independent fashion. They are similar in this sense to eukaryotic signal-transducing GTPases.

L45 ANSWER 25 OF 29 MEDLINE DUPLICATE 15
ACCESSION NUMBER: 86132051 MEDLINE
DOCUMENT NUMBER: 86132051 PubMed ID: 3912016
TITLE: [Cancer of the prostate: prostatic acid phosphatases. Biochemical properties and assay].
Cancer de la prostate: phosphatases acides prostatiques. Proprietes biochimiques et determination.
AUTHOR: Jardillier J C; Desoize B; Delvincourt C
SOURCE: BULLETIN DU CANCER, (1985) 72 (6) 519-26.
Journal code: 0072416. ISSN: 0007-4551.
PUB. COUNTRY: France
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: French
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198603
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19980206
Entered Medline: 19860328

AB The first data on acidic phosphatase were published in the beginning of the 20th century. The applications to prostatic carcinoma were performed by Gutman in 1936. The enzyme is a glycoprotein which action mechanism is similar to a **histidine-phosphatase**. Acidic phosphatase has been found in numerous tissues and blood-stream cells. Its structure is dimeric and glycans average 10% of the M.W. The enzyme has been assayed in serum, using numerous substrates in the presence of specific inhibitors. The best results were obtained with thymolphthalein phosphate. Improvements were done by assays in bone marrow and by the introduction of immunological technics which lead to a better appreciation of tumoral invasion.

L45 ANSWER 26 OF 29 MEDLINE DUPLICATE 16
ACCESSION NUMBER: 84132563 MEDLINE
DOCUMENT NUMBER: 84132563 PubMed ID: 6321242
TITLE: Identification of histidyl and cysteinyl residues essential for catalysis by 5'-nucleotidase.
AUTHOR: Worku Y; Luzio J P; Newby A C
SOURCE: FEBS LETTERS, (1984 Feb 27) 167 (2) 235-40.
Journal code: 0155157. ISSN: 0014-5793.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 198404
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 20000303
Entered Medline: 19840411

AB Inactivation of both cytosolic 5'-nucleotidase and ecto-5'-nucleotidase by diethylpyrocarbonate indicated the presence of an essential histidyl residue which in the cytosolic enzyme was conclusively located at the active site. Inactivation by thiol reagents indicated the presence of an essential cysteinyl residue in both enzymes. The data suggest that both 5'-nucleotidases belong to a group of **histidine phosphatases** which also includes glucose-6-phosphatase and acid phosphatase. A working hypothesis for the catalytic mechanism of these enzymes is proposed.

L45 ANSWER 27 OF 29 MEDLINE DUPLICATE 17
ACCESSION NUMBER: 82229418 MEDLINE
DOCUMENT NUMBER: 82229418 PubMed ID: 6124201
TITLE: Human prostatic acid phosphatase: a **histidine phosphatase**.
AUTHOR: Van Etten R L
CONTRACT NUMBER: GM 27003 (NIGMS)
SOURCE: ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, (1982) 390 27-51.
Journal code: 7506858. ISSN: 0077-8923.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198208
ENTRY DATE: Entered STN: 19900317
Last Updated on STN: 19970203
Entered Medline: 19820807

L45 ANSWER 28 OF 29 SCISEARCH COPYRIGHT 2003 THOMSON ISIDUPLICATE 18
ACCESSION NUMBER: 82:309140 SCISEARCH
THE GENUINE ARTICLE: NV127
TITLE: HUMAN PROSTATIC-ACID PHOSPHATASE - A **HISTIDINE PHOSPHATASE**
AUTHOR: VANETTEN R L (Reprint)
CORPORATE SOURCE: PURDUE UNIV, DEPT CHEM, W LAFAYETTE, IN, 47907 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, (1982) Vol. 390, No. JUN, pp. 27-51.
DOCUMENT TYPE: Article; Journal
LANGUAGE: ENGLISH
REFERENCE COUNT: 63

L45 ANSWER 29 OF 29 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1953:16092 CAPLUS
DOCUMENT NUMBER: 47:16092
ORIGINAL REFERENCE NO.: 47:2793c-d
TITLE: Phosphatases
AUTHOR(S): Akamatsu, Shigeru
CORPORATE SOURCE: Chiba Univ.
SOURCE: J. Japan. Biochem. Soc. (1951), 23, 93-8
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB A review is given of studies on phosphatases by A. Topics included: identification of phosphomonoesterase action with **histidine; phosphatase** activities in conjunction with histamine and other amino acids; effect of Mg++ on phosphomonoesterase activity and enzymic detn. of Mg++; math. analysis of the inhibitory effect of excess amino acids; detn. of Km values of phosphomonoesterase, phosphodiesterase, and pyrophosphatase with various substrates either directly or indirectly; and the analysis of Km (Michaelis const.).

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